

CHEMIST & DRUGGIST

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—reports
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CHEMIST & DRUGGIST

111th year of publication Vol. 192 No. 4674

The newsweekly for Pharmacy

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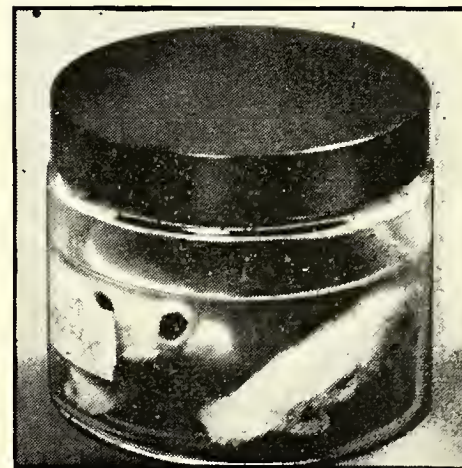
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FIP Congress: page 250



Beta-propiolactone: pages 232-3

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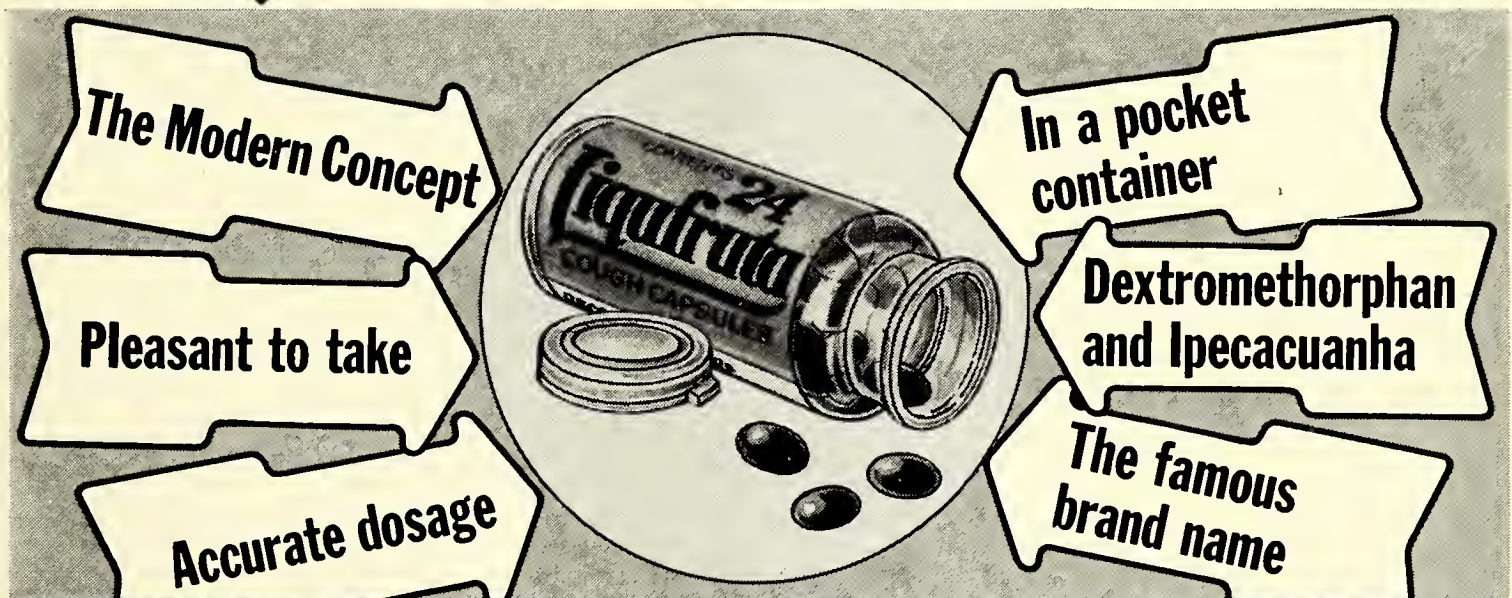
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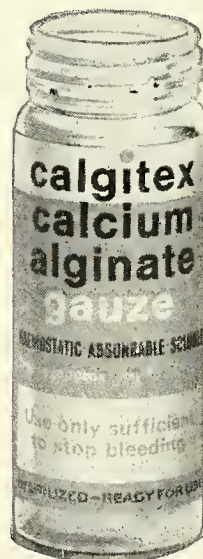
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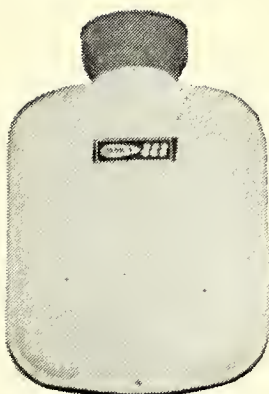
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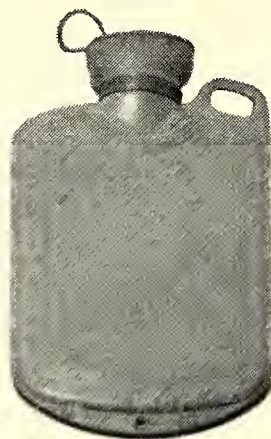
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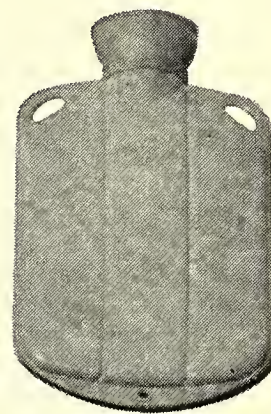
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Luxury bottle with two
handles. Fitted spare
washer — 11/-



CANNON SUPERB
(Extra Large)
Soft ribbed. Fitted
stopper retainer and
spare washer — 9/3



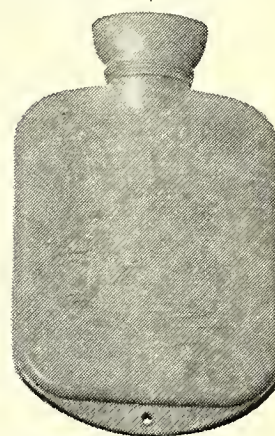
CANNON 666 (Large)
Soft ribbed both sides.
Fitted spare washer — 9/3



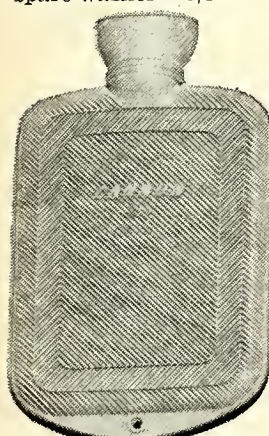
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CANNON 999 (Large)
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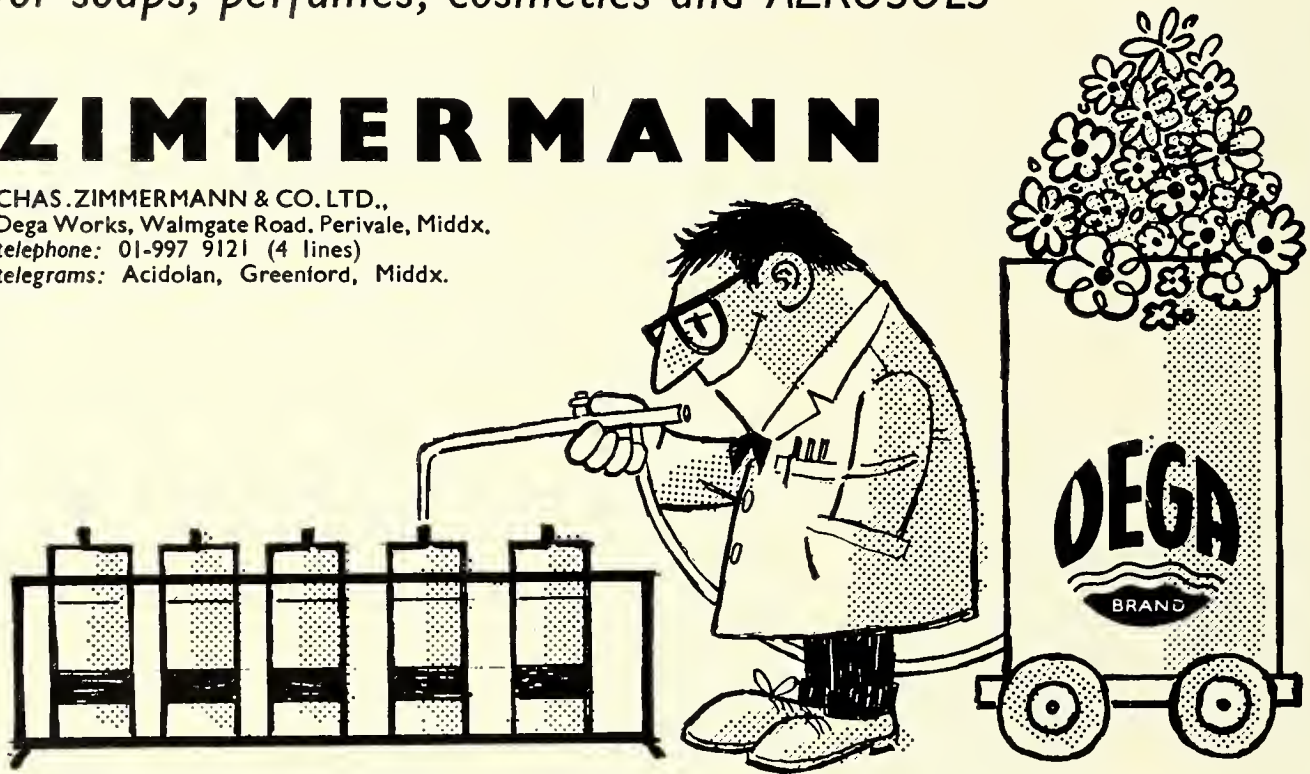


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As a result of the ever increasing popularity of the Cow & Gate 16 oz. cartons of Half Cream and Full Cream Milk Foods, the 20 oz. tin will be discontinued from 1st October 1969.

The formulae of the Milk Foods contained in the 16 oz. cartons will remain identical to that of the discontinued tins.

Cow & Gate—the choice of millions of mothers

Minister warns on drug interaction

A warning of the hazards of drug interaction was given by Mr David Ennals, Minister of State, Department of Health and Social Security, when he welcomed the International Congress of Pharmaceutical Sciences in London on Monday. He said there was a danger in the over-prescribing of drugs with the related hazards of drug interactions.

Questions bearing on medicines and their uses were prominent in the activities of a number of international organisations and the British Government was always ready and willing to co-operate.

It would be impossible to over-estimate the contribution made to the welfare of mankind by the pharmaceutical profession. Like disease itself the profession knew no frontiers.

Extensions of knowledge were not withheld for the benefit of the country of discovery but shared for the benefit of all.

In a different, but complementary way, the pharmaceutical industry had also become highly international in its organisation and international trade in medicines had increased in importance with every new discovery and in the "pharmaceutical revolution" of the last 30 years. And because the new medicines carried with them not only valuable benefits but also the possibility of adverse reactions in patients, Governments had become concerned to secure that the hazards were identified and made thoroughly known, so that the doctors could balance the risk of adverse reaction against the expected clinical benefit.

Though not directly involved, the Government was following with great interest, as they were made known, the numerous draft directives of the European Economic Community on the co-ordination of pharmaceutical legislation and the requirements underlying the right of establishment and practice. Some of those present had been involved in such international activities, which were marked by a general willingness on the part of all countries to co-operate and were a necessary complement and support to general progress in this field.

A glance at the Congress programme, with its wide-ranging subjects, showed the esteem with which the Federation was regarded throughout

the world, as a forum for the exchange of knowledge and discussion of common problems by those concerned with the many aspects of the pharmaceutical sciences. He congratulated the Pharmaceutical Society of Great Britain, which had long played an honourable and distinguished part in fostering co-operation with other national professional organisations of pharmacists, on having invited the Federation to hold this Congress in the United Kingdom, and wished all a successful meeting.

Sir Solly Zuckerman, chief scientific adviser to the Government, spoke on behalf of British scientists in general and welcomed members of the FIP to London. He reminded his audience that he was at one time working as an endocrinologist. He considered that the mechanism of hormone function was a challenge to all scientists. Pharmacists had a vast responsibility in educating the public and also members of the medical profession. He found it "most astounding" that doctors were persuaded to use preparations "by techniques more appropriate to the sale of cosmetics. What I find most astonishing is the way the information is given."

Anything that pharmacists could do to encourage the more rational use of drugs would be appreciated as would efforts to standardise pharmaceutical procedures, for he had been surprised at the manner in which "chemotherapeutical practice" varied from country to country.

Mr A. Howells, president of the Pharmaceutical Society, who introduced the speakers, then called upon Dr Winters (FIP president), who congratulated Mr Bloomfield and his committee on the arrangements for the Conference. He later invited Professor Steiger to take the chair.

Professor Steiger believed "we were at a new turning point of pharmacy." Fundamental research had revealed drug interactions and the pharmacist was attaining new heights in his role as a consultant to the doctor.



Mr David Ennals, Minister of State, Department of Health and Social Security, speaking at the Congress

Retail sales index up

The index of retail sales by chemists and photographic goods dealers in July was 123 (average monthly sales in 1966=100) an increase of seven per cent over the same period a year earlier. Board of Trade figures also reveal the following indices for the month:

Independent retailers	118 (— 4 per cent)
Multiple retailers	132 (— 10 per cent)
Co-operative Societies	106 (+ 2 per cent)

The figures do not allow for receipts under the National Health Service.

Earnings in retail pharmacy

From results of a survey of the earnings of managers engaged in retail pharmacy published in the September issue of *Pharmacy Management* it appears that pharmacists registered between 1945 and 1955 receive the highest salaries — £2,502 average for those receiving benefits; £2,430 those not receiving benefits. Thirty per cent received benefits in the 1945-55 bracket.

Overall, 17 per cent of the 87 managers included in the survey were provided with a motor car as a fringe benefit; 74 per cent had no benefit. Highest salaries were paid in the South-east of England including London the average earnings being £2,450 which represented a 38.2 per cent increase over 1965.

South and South-west England was the next area where earnings averaged £2,305, representing an increase of 13.5 per cent over 1965.

UK narcotic estimates

The United Kingdom estimated requirements of narcotics in 1969 are as follows (quantities are in kilos except where otherwise indicated):

Alphaprodine	1 g
Anileridine	174 g
Cannabis	35
Cocaine	460.75
Codeine	14,028
Dextromoramide	25
Diethylthiambutene	11
Dihydrocodeine	1,442.234
Dihydromorphine	100 g
Dimethylmorphine	500 g
Diphenoxylate	115.068
Dipipanone	96.631
Ethylmorphine	204
Etorphine	10 g
Etorphine-3 methyl ether	700 g
Fentanyl	45 g
Heroin	75
Hydrocodone	7
Hydromorphenol	8.633
Hydromorphone	229 g
Levorphanol	2
Methadone	78.578
Methadone-intermediate	130.950
Morphine	20,787
Normorphine	1 g
Opium	337,899
Oxycodone	15.538
Oxymorphone	595 g
Pethidine	1,000
Pethidine intermediate A	5,215.485
Pethidine intermediate B	100 g
Pethidine intermediate C	160.117
Phenazocine	4
Phenoperidine	459 g
Pholcodine	1,443.745
Piritramide	20 g
Thebacon	1.958
Thebaine	331

The details were included in the second supplement, Estimated World Requirements of Narcotic Drugs in 1969 (United Nations publication, Ref. Sales No.: E/F/S 69.X1.9).

Society headquarters deemed 'dangerous'

A Dangerous Structure Notice has been served on the Pharmaceutical Society of Great Britain in connection with part of its Bloomsbury Square headquarters.

The part of the premises affected is the wall facing Great Russell Street and since the building is scheduled as an Historic Building, the Society will be required to restore it to its original form.

The weakness came to light during the course of repainting the exterior recently. Brickwork behind the stucco was found to be crushed in places and that water had penetrated

affecting the mortar. Therefore the local Council served the notice on the Society as a precaution.

As an immediate safety measure the windows in the basement, ground and first-floor levels are being shored up pending a more thorough examination and decision on what action must be taken. It could entail the rebuilding of the whole of the wall.

Roads named after pharmacists

The London Borough of Wandsworth Council has decided to name the roads of its new Beaumont Road housing estate, Southfields, after three eminent pharmacists and commemorative plaques are to be unveiled on the estate on September 16 at 3 p.m.

The pharmacists are: Sir Hugh Linstead, OBE, secretary of the Pharmaceutical Society of Great Britain 1926-64 and Member of Parliament for Putney from 1942-64; Frank Arnal, OBE, president of the *Ordre National des Pharmaciens de France* and chairman of the Franco-British Pharmaceutical Commission; and Jacob Bell, founder of the Pharmaceutical Society of Great Britain and a resident of West Hill, Putney in the mid-nineteenth century.

At a simple ceremony the plaques will be unveiled to the pharmacists by Sir Hugh Linstead, to be followed by an inspection of some of the recently completed dwellings. The main access road will be known as 'Linstead Way' and motor car parking facilities are to be built under the road.

Course on crop protection

The response from members to the first notice about the week-end course on crop protection has been very disappointing, says a circular from the Pharmaceutical Society of Great Britain.

The course, at the Sunderland School of Pharmacy from September 20 to 22, consists of eight lectures and a discussion

forum. It has been organised for members of the Society's agricultural and veterinary pharmacy group.

The circular says the disappointing response is difficult to understand because the course is comprehensive, and all group meetings and courses in the past have been extremely well supported.

The lectures are:

"Pest, Disease and Weed Control in Fruit, Forestry and Ornamentals"

"The Use of Herbicides in Sugar Beet, Brassicas and Potatoes"

"Advising the Cereal Grower on Weed Control"

"The Application and Mode of Action of Insecticides"

"The Use of Herbicides in Pea and Bean Crops"

"Couch Grass—the Weed and its Control"

"The Development and Use of Aphicides and Molluscides"

"Current Usage of Fungicides in Agriculture and Horticulture"

"The Induction of Lactation"

"The Use of Pregnant Mare's Serum 'Gonadotrophin' (PMSG) for Inducing Reproductive Activity in Anoestrous Animals"

"The Use of Naturally Occurring and Synthetic Steroids in the Induction of Breeding Activity in the Sheep"

Recommendations for safe use

The Ministry of Agriculture Fisheries and Food has issued new or revised recommendations for safe use in Great Britain for the chemical compounds:

Pyrethrum, for home kitchen and garden use, **Phosalone**, **diazinon** and **decoquatate**, for veterinary use; **methachlor** and



The offending side wall at Bloomsbury Square

chlorbufam herbicides; **quino-methionate** and **drazoxolon**, **fungicides**; **alphachloralose**, stupefying bait; **polyvinyl acetate**, as an animal repellent; **chlorfenvinphos**, **bromophos** and **thionazin**, insecticides; **copper sulphate**, as an earthworm killer and **malathion**, an organophosphorus insecticide and acaricide in home gardens; **methabenzthiazuron**, **flurecol** and **ioxynil**, herbicides.

Irish news

Strike threat is called off

A threatened strike by about 110 employees of two Dublin wholesale manufacturing chemists—P. C. Cahill & Co Ltd and May Roberts (Ireland) Ltd—due to take effect on August 29, was averted following talks between the management and the union from which a new pay offer was made and accepted by the staffs. The increases are understood to have ranged from 15s. to 30s. per week according to seniority.

Warning against 'quacks'

A warning to the public to go only to registered medical practitioners and not to "quacks" when they are ill was issued by Mr J. J. Sheehan, coroner, at an inquest in Cork on September 5.

It was stated that a ten-week old baby, Donal Sheehan, Iona Park, Mayfield, Cork, who died in hospital on May 14, had been taken to two doctors and then to a woman in Fermoy who gave the parents ointment for the child.

Commented the coroner: "The child was being treated by two registered doctors and yet it was later taken to a quack."

A verdict in accordance with the medical evidence that the child suffered a hereditary disease and that he would have died at an early age—was returned.

Cameras worth almost £215 were stolen in a recent smash-and-grab raid on the pharmacy of Mr C. Flynn, MPSI, Tere-nure Road East, Dublin.

Training board meets trade associations

There was warm praise for the way the Chemical and Allied Products Industry Training Board has co-operated with the industry, when officers and members of the board met representatives of trade associations on September 9.

The chairman, Mr C. M. Wright, stressed the attention that had been paid to the smaller firms with fewer than 100 employees, which constitute 11,000 of the 15,000 companies within the Board's scope.

Mr K. S. Flory, secretary of the Paintmakers' Association, called for careful consideration of the position of companies that did not claim grant because of practical difficulties. For example, it might be difficult to release for training the only person employed on a particular function, or there might be too few employers in an area to justify courses.

In those circumstances an arbitrary levy based on payroll was unfair. Such firms should be treated as special cases and grant should be more liberally interpreted.

Mr D. G. Worthy, Chemical Industries Association, looked forward to an eventual reduction in the levy as training became more widespread, with the Board moving towards the provision of expert advice and specialised grants.

Mr I. Hall, Photofinishers' Association, explained his industry's particular difficulties, brought about by a rapid growth in a few years and a highly seasonal trade. A typical company had some 10 permanent staff but might take on 150 during the summer.

Discussion of the need for companies to share the services of a training officer if they could not individually employ one full-time prompted Dr T. M. Cook to outline two feasibility studies being carried out by the Board.

One, in Scotland, brought together a homogeneous group of companies in the paint industry, the other, in Slough, involved a heterogeneous group, including pharmaceuticals. The aim was to appoint, with the Board's assistance, a group training officer servicing 10-12 small companies. His activities would be determined by the Board's local training adviser and a local management committee drawn from the member companies.

Such officers would be better

than independent consultants because the Board could guarantee their calibre, could ensure that they were well versed in the industry, and could draw up safeguards for their employment.

Survey of fruit juice market

Thirty-seven per cent of the United Kingdom market for fruit juices is accounted for by blackcurrant juice; 10 per cent by Welfare orange; 11 per cent rose hip syrup and 12 per cent lemon juice according to a report in *Retail Business* No 139. Total value is put at £15m.

The report mentions that for blackcurrant juice grocery outlets have become more important but the chemist's shop is still an important outlet.

Ribena, the leading brand, with two-thirds of the market, has faced increasing competition from various sources and in particular from the many own brands which have sprung up. Volume sales of blackcurrant juice will continue to increase, says the report but prices, while increasing should do so at a relatively slower rate for the time being because of competition. Delrosa is estimated to have 72-73 per cent of the rose hip syrup market in Great Britain; Optrose, 18-20 per cent.

The market for lemon juice is monopolised by PLJ with a 12 per cent share.

Proposed names for pesticide

The draft common names listed below are being circulated with a view to their eventual adoption as ISO recommended common names.

Comments on the proposed names should be addressed to Mr D. G. Berry, British Standards Institution, 2 Park Street, London W1.

Alachlor*

2'-chloro-2,6-diethyl-N-methoxymethylacetanilide
2'-chloro-N-(2,6-dimethylphenyl)-N-methoxymethylacetamide

*The name methachlor was previously proposed for compound.



One of the first visitors to the Edme stand on opening day at the Irish International Food and Drink Fair, in Dublin, recently was Eire's Deputy Prime Minister Mr Erskine Childers. The photograph shows Mr C. F. Ashard, Edme's food sales manager, offering a

sample of one of his Company's products. Left to right: Mr C. F. Ashard, Mr J. Bourke, president of the Retail Grocery, Dairy and Allied Trades Association, exhibition sponsors, Mr Childers and Mr R. W. Piper, counsellor at the British Embassy, Dublin

Products for farmers

The Ministry of Agriculture Fisheries and Food has added the following to the list of Approved Products for Farmers and Growers 1969 in accordance with the Agricultural Chemicals Approval Scheme: **BHC**, gamma BHC seed dressings, gamma BHC with organomercury compounds, Leytosan combined D.S. seed dressing (Berk Ltd). **Chlorfenvinphos**, liquid formulations, Bir'ane M, for control of mushroom flies in mushroom compost (Shellstar Ltd).

Chlorpropham liquid formulations, Herbon 40 per cent chlorpropham (Harbon Ltd).

Dalapon, Dalapon with MCPA, for total weed control on land not intended for cropping. Liquid formulations, Rasinox (Burt, Boulton and Haywood Ltd).

Dieldrin dry seed dressings, dieldrin with organomercury. Leytosan wheat bulb fly 'D' seed dressing (Berk Ltd).

Maleic Hydrazide liquid formulations, Regulox W, a rain-fast formulation (Burt, Boulton and Haywood Ltd).

Maleic Hydrazide with 2,4-D. For retarding grass growth and controlling broad-leaved weeds in grass. Liquid formulations, BBH 43 (Burt, Boulton and Haywood Ltd).

Pentachlor. For selective weed control in carrots, celery, parsley and parsnips etc, post- or pre-emergence. Pentachlor alone, liquid formulations, Herbon Solan 40 per cent (Herbon Ltd). Pentachlor with chlorpropham, liquid formulations, Herbon Brown (Herbon Ltd).

2,4,5-T, 2,4,5,T with 2,4-D ester formulations. Brushwood Emulsion, for treatment of cut stumps using water as diluent (Burt, Boulton and Haywood Ltd).

Anisuron

N-(3,4-dichlorophenyl)-N-(4-methoxybenzoyl)-dimethylurea

Aziprotryne

2-azido-4-isopropylamino-6-methylthio-1,3,5-triazine

Benzuron

N-benzoyl-N-(3,4-dichlorophenyl)-dimethylurea

Carbasulam

methyl N-(N-methoxycarbonylsulphanilyl)-carbamate

Chlorfenprop-methyl

methyl 2-chloro-3-(4-chlorophenyl)propionate

Decarbofuran

2,3-dihydro-2-methylbenzofuran-7-yl methylcarbamate

Dinofenate

2,4-dinitrophenyl 2,4-dinitro-6-s-butylphenyl carbonate

Edifenphos

ethyl SS-diphenyl phosphorodithioate

Formparanate

3-methyl-4-dimethylaminomethylene-aminophenyl methylcarbamate

Guanoctine†

di-(8-guanidino-octyl)amine

†It should be stated which salt is present, eg guanoctine sulphate.

Methocrotophos

dimethyl 2-(N-methoxy-N-methylcarbamoyl)-1-methylvinyl phosphate, *cis* isomer
3-(dimethoxyphosphinyloxy)-N-methoxy-N-methylisocrotonamide

Pyridinitril

2,6-dichloro-4-phenylpyridine-3,5-dicarbonitrile

Terbucarb

2,6-di-*t*-butyl-4-methylphenyl N-methylcarbamate

2,6-di-*t*-butyl-*p*-tolyl N-methylcarbamate

Tetrachlorvinphos

2-chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate, *trans*-isomer

Trimorph

4-(triphenylmethyl)morpholine
4-tritylmorpholine

Conference reserves its autonomy

Responsibility for the organisation of the British Pharmaceutical Conference will pass from the Conference Executive to the Council of the Pharmaceutical Society after the 1970 Conference — but only if the detailed arrangements are approved at that Conference.

The approval condition was made in the form of an amendment to the Executive's motion for transfer put at the closing session of the 1969 Conference in Belfast on September 5. The amendment came from Mr I. Benjamin, Biggin Hill, after a succession of speakers had expressed reservations about some elements of the proposals whilst generally agreeing with the principles.

An outline of the proposals and their history was put before the meeting by the chairman, Dr E. F. Hersant. The main changes would be for the Society's president to be the main dignitary, for the professional sessions to be split into hospital, general practice, industrial, etc, sections, and for the scientific programme to be in the hands of a science committee elected at a science business session (see *C&D* August 2, p 96). Dr Hersant stressed the 'enabling' nature of the motion which was not a detailed statement of a proposed Conference.

MR G. RAINE, Harrow, wished to ensure that the proposal for a hospital pharmacy section would be fully discussed with the Guild of Public Pharmacists. Any constructive discussion of hospital affairs must be in private and "off the record".

Having received confirmation that the office of Conference chairman would be abolished, MR F. H. MYLROI, West Middlesex, sought to refer the motion back to the Executive on the grounds that Conference would lose a lot of prestige if it had always to rely on the Society's president. "You get some peculiar people on the Council of the Society." After considerable procedural wrangling, the reference back was defeated on a show of hands.

MR M. CRANE, London, said that loss of the Conference chairman would be compensated by the gain of sessional chairmen. The pre-eminent person in the pharmaceutical world must be the president of the Society. He suggested that at least one of the professional sessions should be chaired by

the Society's vice-president in his own right—"so we can see how the future president performs."

MR S. DURHAM, Sheffield, was reluctant to endanger the present form of Conference and could not support the proposals at this stage. Main functions of the Conference were to create maximum contact between people from all branches of the profession and to be the "shop window" of pharmacy. The Council was not always representative of all branches and Mr Durham sought assurances that barbed-wire barriers would not be erected and maintained.

The position of those who were Conference members without being Society members was questioned by PROFESSOR EL SAID, Ibadan, who was assured by Dr Hersant that they would be covered as at present.

DR G. E. FOSTER, Dartford, asked the Executive and Council to take note of a proposal by MR F. W. ADAMS (former secretary and registrar of the Society) that professional sessions should be organised by a committee in the same way as was proposed for scientific sessions.

PROFESSOR A. R. ROGERS, Edinburgh, had the impression that the proposals were "a rushed document", the result of hasty compromises. Conference should be given the opportunity to take part in the formulation of the changes, which should not be put into effect until 1972. It was at this point that Mr Benjamin put his amendment.

Supporting, MR H. MACKLEY, Newcastle upon Tyne, said what was wanted was to remove some of the rigidity of the Conference, not a wholesale change. Local committees should be allowed to try some innovations.

MR BENJAMIN said that, under his amendment, if the Leeds Conference were unsatisfied with the arrangement made, the transfer to Council would not take place. The amendment was carried by a large majority.



For the third year two specially designed Optrex challenge trophies in silver and Perspex were awarded at the National Small-Bore Rifle Association's British pistol championship at Bisley on September 1. One of the trophies was presented by Miss Optrex, Shirley McNeal, to Miss Susan Swallow of Horbury, Wakefield, Yorkshire.

Susan works in the West Riding Constabulary and is a member of the Osset and District Pistol Club. This is the third year that she has won the award. Miss Swallow was also presented with an engraved silver medal by Optrex.

DR T. D. WHITTET, London, hoped the position of Northern Ireland and Irish Republic pharmacists would not be jeopardised. Dr Hersant: I am sure that will be taken into account.

The following substantive motion was then carried:—"That after the conclusion of the 1970 Conference in Leeds the responsibility for organising the British Pharmaceutical Conference be transferred from the Conference Executive to the Council of the Pharmaceutical Society of Great Britain and that the Executive should have powers to make all necessary arrangements for the transfer, subject to the arrangements being presented to and approved by the Conference in Leeds in 1970."

Overseas news

Months' business expected in days

Some wholesalers and agents exhibiting at the Indro-Parfumeriebeurs 1969, Utrecht August 25th-29th, expected to "do three months' business in the five days." Most had all their representative force on hand to deal with any inquiries.

The 4,000 or so druggists in Holland have a total turnover

of some 500 million guilders annually. Despite the sharp increase in competition from multiple and individual stores in the grocery sector in recent years, turnover in 1968 rose by 6 per cent.

The Indro-Parfumeriebeurs, occupied a record net stand area of nearly 120,000 sq. ft. in the Juliana Hall, Utrecht.

Many British pharmaceutical companies' products were seen on the stands. Displays of Bronnley soaps and toiletries were arranged adjacent to the entrance as were arrangements of Johnson & Johnson products. On an upper floor the agent for Wilkinson Sword razor blades was holding a competition with a motor car as first prize. Altogether there were 199 stands at the exhibition and among the exhibitors were: Addis Ltd, Ashe Laboratories Ltd, Carman Curler Co Ltd, Christy & Co Ltd, Cullinsford of Chelsea, Cyclax of London, Dae Health, Dunhill Toiletries for Men, Dylon International, Eylure Ltd, Andre Phillippe, Dorothy Gray Ltd, International Cosmetic Co, International Chemical Co Ltd, Kent, Kigu of London, Lenthier Ltd, Morny Ltd, M. & R. Norton Ltd, Outdoor Girl, A. & F. Pears Ltd, Personality Beauty Products Ltd, Potter & Clark Ltd, Racasan Ltd, Sanitas Group Sales Ltd, Smith Kendon Ltd and Steiner Products Ltd.

NEWS IN BRIEF

□ A display of colour transparencies by South African photographer Barry Lategan will be held at Kodak House, Kingsway, from September 15 to October 3.

□ Among the 165 items accepted for design index in August by the Council of Industrial Design was a personal scale made by Hollands & Blair Ltd., Benson Grove, Thornton Heath, Surrey.

□ A new British Standard *Nomenclature for Spices and Condiments* contains entries for 68 plants yielding spices or condiments listed in alphabetical order of botanical names. (BS 4488: 1969. BSI Sales office, 101 Pentonville Road, London N1, price 10s).

□ A national newspaper which last week printed a story under the title "NPU loses ex-leader" must have provided those pharmacists that saw it with the best non-news item for some time. The "NPU" referred to National People's Union in Rhodesia and the ex-leader to Mr Percy Mkudu, desposed as leader of Rhodesia's parliamentary Opposition.

□ Of the 637 candidates who sat this year for the first final examinations for the Certificate in Retailing, the national course which has replaced the Retail Trades Junior Certificate and the Retail Distributive Trades Junior Course (Scotland), 471 students qualified for the Certificate. Over half (353) of the candidates were from the City and Guilds of London Institute examining body.

□ The Institute of Pharmacy Management are seeking their members' advice on the choice of venue for their 1970 study tour. There are four suggestions being considered: A sail to Northern Spain with the liner serving as hotel throughout (5 days); three-day visit to Zagreb by scheduled air service; a week's visit to Yugoslavia at two centres; three- to five-day visit to Zagreb by chartered air line.

□ A motion calling for the abolition of Health Service charges was overwhelmingly approved at the Trades Union Congress in September. It had been proposed by Bob Edwards MP who is general secretary, Chemical Workers Union, who claimed that the cost could "easily be recovered from the drug industry." The industry, he claimed, "made 1,000 per cent profit from £6m. worth of tranquillisers purchased."

□ While the bulk of overseas members of FIP (see p 250) attending the London conference registered at the Society's headquarters on Sunday, no less than 400 wallets were identified and handed out within the short space of one hour at Friends House on Monday morning. Perhaps that reflected the eminence of the trio who did duty at the reception desk for the purpose: the Society's vice-president (Mr W. M. Darling), a past-president (Mr Allen Aldington) and the secretary and registrar (Mr Desmond Lewis).

The Xrayser column

Planned service

In his speech at the opening of the meeting of the British Pharmaceutical Conference at Belfast, the president of the Pharmaceutical Society, Mr Albert Howells, touched on some matters of present concern, most important of all probably being his reference to a planned pharmaceutical service. I can think of no other question which bristles with so many difficulties, and though in principle we are committed to producing some kind of a report, I think that the issues have not yet been fully faced.

The president said it was recognised that novel and even revolutionary measures might have to be adopted before the policy could be implemented.

If a complete network of pharmacies were to be established, he said, control over their siting had to be envisaged, and if pharmacists were to be attracted to areas that could not offer them economic viability, an incentive payment might be necessary. The president recognised that at first sight those points might appear to be unpalatable to British pharmacists who, unlike their colleagues in several European countries, had been taught to survive in complete independence.

The more one ponders on the president's remarks, the more difficult it is to reconcile a planned pharmaceutical service with any form of independence at all. To secure a service in which every community has a pharmacist, it seems to me that freedom must go and there must come inevitably a form of control. And with the composite kind of pharmacy that has evolved here, with independent pharmacists and corporate bodies, one cannot conceive of direction being freely accepted.

I know of quite large urban developments into which the corporate bodies would not venture, there being no High Street shopping centre to attract them.

Extent of the revolution

It seems impossible to visualise a planned pharmaceutical service without, as I have mentioned, a form of direction, and such direction, it seems to me, could be based only on the individual pharmacist as such. That would involve a loss of independence which is implicit in providing a pharmacist for every community. Incentive payments would not, of necessity, ensure the distribution that is essential to providing the network which seems to be the objective of the plan under consideration.

Pharmacy as at present constituted cannot fit into the concept. We must, I feel, face the prospect of the growth of health centres in which there is a full pharmaceutical service, or put ourselves as pharmacists completely at the disposal of a body with powers to direct. Nothing is to be gained by imagining that the provision of a planned pharmaceutical service means anything other than revolutionary measures.

The success of the project depends upon the extent of the revolution, and how far pharmacy is prepared to give up the complete independence to which the president referred.

Keystone of the arch

The president said that the perils of the pharmacist's independent state were multiplying and that the survival rate in British pharmacy was decreasing rapidly. The pattern has been visible for some years, and what matters most is the survival of the pharmacist *as a pharmacist*.

As Mr Howells said, to sacrifice the absolute independence of decision and action that we enjoy today might be but a small price to pay to guarantee a new and much needed stability. The future must be visualised with the pharmacist himself as the keystone of the arch.

COMPANY NEWS

Albright & Wilson's mixed results

Substantially better results were achieved in the United Kingdom (particularly in the Associated Chemical Companies and Bush Boake Allen divisions) and overseas, including Electric Reduction Co of Canada (ERCo) apart from Newfoundland. However those improvements throughout the group were more than offset by commissioning difficulties at the new phosphorus plant at Long Harbour, culminating in its temporary closure (C&D, May 24, p 456.)

The unaudited results for the six months to June 30 show sales at £61.9m (against £57.7m in the same period of 1968). There was a trading surplus of £6.63m (£6.67m) and a profit before tax of £1.9m (£2.64m).

A decision on the total dividend for 1969 will not be taken until the year's results are available and prospects for 1970 can be more precisely assessed. Shareholders are warned that the directors may not declare any further dividend beyond the 7 per cent interim already paid.

Greeff and 3M scheme

Greeff-Chemicals Holdings Ltd (Greeff) announce that they have been advised by Minnesota Mining & Manufacturing Co Ltd (3M Ltd) that meetings will be held on September 26 to consider a scheme of arrangement involving the share capital of 3M Ltd.

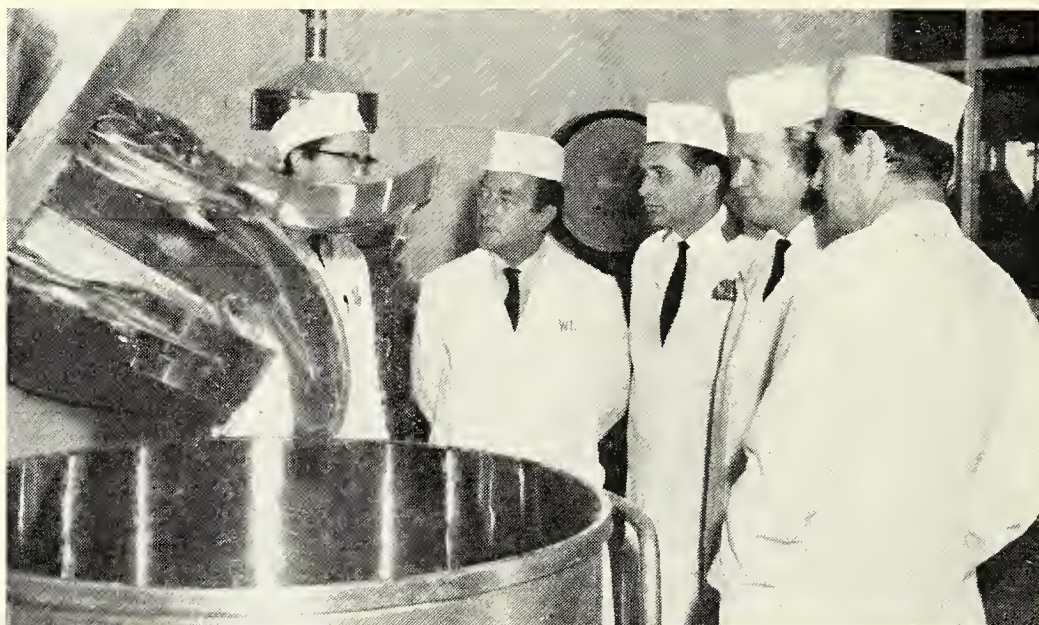
The immediate effect of the proposals would be to increase Greeff's income from its investment in 3M Ltd from £84,000 in the year ended December 31 1968, to an annual rate of £154,800. In addition, there will be conversion rights which would offer an opportunity eventually to hold an investment in a successful US company with a growth record.

Big order from Bulgaria

A consortium consisting of C. E. King & Sons Ltd, Manesty Machines Ltd, Thos Hill (Hull) Ltd, Dawson & Barfos (Mfg) Ltd, Autopack Ltd and Newman Labelling Machines Ltd, in conjunction with Wogau Machinery Ltd, have recently signed a contract with Pharmachim in Bulgaria to the value of £123,600 to supply high speed tablet packing lines, tablet making equipment, ancillary plant and ampoule filling plant.

Delivery is scheduled over a 4-7 months period and will equip two factories in Sofia. The order was obtained against strong West German competition which had previously supplied equipment to Pharmachim.

C. E. King are supplying one tablet and



Members of a Russian trade delegation recently visited the Fawdon works of the Winthrop Products Co. The company has had nearly 10 years' trading experience with the USSR exporting such products as Dibotin, Negram and Plaquenil. The illustration shows one of the manufacturing areas in the tablet manufacturing

two liquid filling lines at 120 containers a minute including Newman VL high-speed labellers. Thos Hill are supplying bottle washing, drying and sterilising machines prior to the sterile and non-sterile liquid filling lines. Dawson & Barfos (Mfg) Ltd are supplying bottle washing and drying machines on the tablet line.

Manesty Machines are supplying the high-speed tablet-making plant and ancillary equipment and are world leaders in the design and production of high-speed rotary tablet presses.

Takeover rumours

During the weekend publicity was given by some of the national newspapers to the possible takeover of the Stanley Weston Group Ltd. Mr R. Weston, chairman of the Group, told the *Chemist & Druggist* on September 9 that he had not been approached by any company interested in taking over the Group.

The rumour had no doubt arisen through negotiations that were going on for the disposal of a sizeable block of shares (about 31 per cent) owned by a section of the family now resident in the Channel Isles and who had made approaches to both United States and British companies. That position was not new, however, it had obtained for the past year.

Meanwhile, said Mr Weston, the Group was still expansion-minded and they were looking at several propositions at the moment with that policy in mind.

ICI's increased profits

Imperial Chemical Industries Ltd increased their sales during the second quarter by £65m to £668m over those of the same period of 1968.

Profit, before tax, rose to £91m (from

department (from left Messrs B. Carey, departmental manager; M. Leopold, controller eastern European division of the company; E. Sleptsov, head of the consumer goods section of the Trade Delegation to the USSR; I. Nikiforov, representative in the UK of Medexport and Dr A. F. Adamson, Winthrop Laboratories).

£76m) and net profit to £58m (£46m). Interim dividend is unchanged at one shilling per £1 unit.

Stock switch plans

Beecham Group have sent formal documents to holders of 6½ per cent debenture stock of the subsidiary Vitamins setting out a proposed exchange of their stock for 6 per cent unsecured loan stock of Beecham.

The terms are: For £100 nominal of Vitamins stock, £104 of Beecham stock.

Business briefly

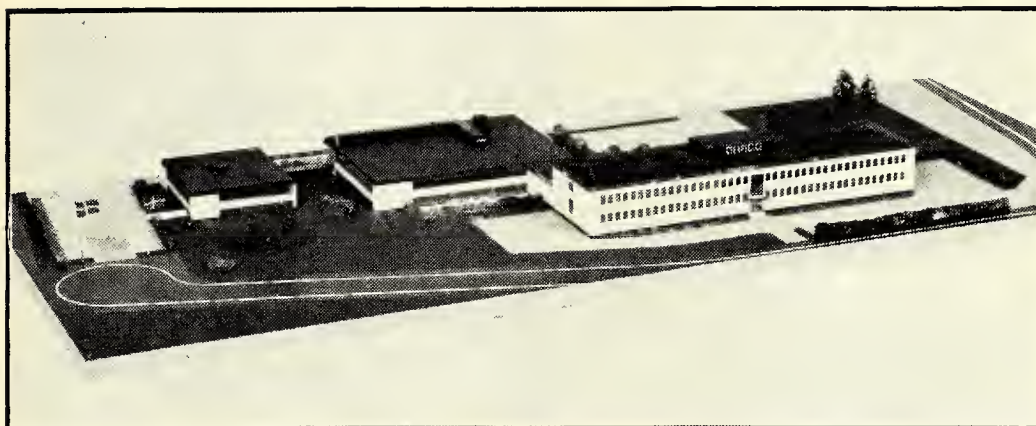
Arrowtabs Ltd have moved to Humber Road, London, NW 2 (telephone: 01-452 0101.)

Thorn Lighting Ltd is the new title of British Lighting Industries Ltd — the lighting subsidiary of Thorn Electrical Industries Ltd.

Crewe Co-operative Society, Ches, who have a pharmacy, are to become part of North Midland Co-operative Society, 10 Newcastle Street, Burslem, Stoke-on-Trent, Staffs, from September 21. The North Midland also have a pharmacy department.

J. R. Geigy, Basle, Switzerland, expect turnover in the current year to show only a slight increase following the sharp growth rate achieved in recent years. A decline in the growth rate shown in the first half of 1969 was due to sales decrease in the agricultural chemical sector.

AB Draco, Lund, Sweden (a member of the Astra Group) is to build a laboratory building costing about £490,000. The building is expected to be ready in Sep-



Model of new laboratories for AB Draco

tember 1970. Draco was founded in 1956 and by 1968 it had a turnover of just under £2m.

Merck Sharp & Dohme are reported to have recently started the production of pharmaceutical products in a plant in San Jose, Costa Rica. The company intends to market its output throughout Central America.

PEOPLE

Desmond Van Zwanenberg, export manager, Inecto Ltd, recently completed a 4,000 mile fact-finding tour of Europe.

Mr J. Dunning, export manager, E. C. De Witt & Co Ltd, has left London for Canada to visit the International Trade Fair in Halifax and also De Witt's agents in Toronto who also handle Potter & Moore products (toiletty division of De Witt & Co). Mr. Dunning will return by way of Chicago and New York.

Mr J. Cox, assistant export manager, E. C. De Witt & Co Ltd is visiting Greece, Cyprus and other Middle Eastern countries to discuss the appointment of agents for the company's various toiletty (Potter & Moore) and pharmaceutical interests in the Middle East.

Mr R. J. Jeffers, MPSNI, Irish area manager of Allen & Hanburys Ltd, who as announced last week has retired after 37 years with the company



Appointments

E. R. Squibb & Sons Ltd have appointed Mr Colin Campbell BA their director of production at Moreton, Ches.

Contalex Lighting Ltd (an associate of Goodwin Storefitters Ltd and Counterpoint Store Equipment Ltd) have appointed Mr D. J. Brown their manager.

Ferro Metal & Chemical Corporation Ltd have appointed Mr Graham Blain, sales representative covering the Midlands and North of England.

Cussons Sons & Co Ltd have appointed W. M. Finch their sales manager (national accounts). Mr Finch joined Cussons in 1964 as sales manager for a subsidiary of the company, Britanol Ltd. In 1966 he became sales manager, Cussons chemist division. Mr Finch's vacated position will be filled by Mr R. T. Best.

Deaths

Berk: On August 27, Mr Arthur Douglas Berk, immediate past chairman of Berk Ltd, aged 85. He joined the then F. W. Berk & Co Ltd in 1905 and was appointed to the board in 1924 becoming chairman in 1942. He retired in 1960.

Vallance: On August 23, Mrs Lena Beryl Vallance, director, A. C. Vallance Ltd, Milton Street, Mansfield, Notts, aged 61.

A native of Enfield, she met her husband while a member of the head office staff of Kodak Ltd. For 30 years Mrs Vallance was on the board of A. C. Vallance Ltd, and ran the business for six years during the 1939-45 war. After the firm was taken over by Rank's last November, she became a director of Vallances of Mansfield (Photographers) Ltd.



Legal report

35 summonses for same company

Thirty-five summonses alleging contraventions of the Pharmacy and Poisons Act 1933 against Shaw and Watkins (Chemists), West End Lane, West Hampstead, London, were adjourned at Marylebone court without a date being fixed.

Prosecuting solicitor told the magistrate, that he had a letter from the official Receiver of the Board of Trade which stated that a winding-up order was made in respect of the company and therefore he could not proceed and was asking for the summonses to be adjourned without a date being fixed. The reason for asking the summonses to be adjourned and not withdrawn, he explained, was because if the company was not finally wound up the summonses could be brought again.

Mr Babington agreed and said if the company was in a position to answer the summonses they should.

The summonses were brought by the Pharmaceutical Society of Great Britain.

Container not labelled

One summons alleged that on July 20 1968, at Portobello Road, Notting Hill, the company unlawfully sold to Thomas Sheen a poison, namely dexamphetamine sulphate in a container which was not labelled with the name of the seller of the poison and the address at which it was sold.

A second summons alleged that Amytal tablets were similarly sold.

The third summons alleged that on April 29, 1967, the company dispensed a prescription for BTZ tablets, containing a poison, and that the date on which the prescription was dispensed was not entered on the prescription, above the signature of the prescriber.

Twenty-five further summonses alleged similar offences concerning prescriptions for Fourth Schedule poisons.

The twenty-ninth summons alleged that on June 11, 1968, the sale to a Mary O' Connor of Drinamyl tablets was not entered in the prescription book.

Two further summonses alleged that two sales, both alleged to have been made on July 20, 1968, of amylobarbitone, and dexamphetamine tablets, respectively, were made without the authority of a prescription.

Another two summonses alleged that the company sold to Thomas Sheen Amytal tablets and dexamphetamine tablets respectively and failed to retain the prescription for the requisite period of two years.

The last two summonses alleged that the sale of dexamphetamine tablets and Amytal tablets respectively to Thomas Sheen was in breach of the Poisons Rules, 1968, in that the number of times which the supply might be made not being stated on the prescription it was dispensed more than three times.

BETA-PROPIOLACTONE: A U

John A. Myers BPharm FPS LLB DPA FCCS, group chief pharmacist at the Edinburgh Royal Infirmary, describes the use of beta-propiolactone to sterilise pig heart valves

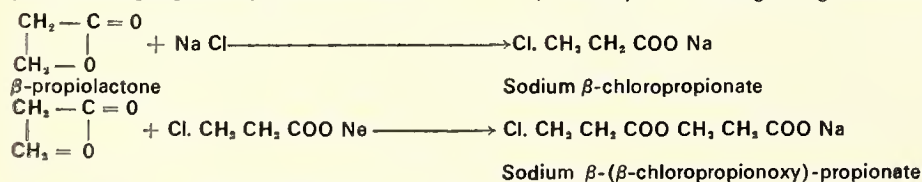
Beta-propiolactone² is a colourless liquid, freezing point -33°C to -31°C and boils with decomposition between 155°C and 162°C . It must be stored at -15°C to -20°C . Material frozen solid should be discarded. Its saturation vapour concentration at 25°C is 8.1 mg per litre. It has a specific gravity of 1.149 at 20°C and a solubility in water of 37 per cent v/v at 25°C . It has a sharp acidic odour. The vapour is irritant to mucous membranes and strongly lachrymatory in low concentration, which acts as an early warning system of escaping vapour.

The liquid is a vesicant and carcinogen^{3, 4}. A single subcutaneous injection of 0.002 ml into mice has been reported to cause sarcomas and squamous papillomas.⁴ No cases of human cancer attributable to the use of the compound have been reported. Inhalation of the vapour produces headache, tachycardia, bounding pulse, and epigastric distress. The pure chemical can only be stored satisfactorily for one or two weeks at room temperature as the liquid slowly polymerises⁶. The rate is speeded up by rise of temperature and also by the catalytic action of acids, bases and salts.

Explosive reaction

Catalysts which are normally soluble in beta-propiolactone such as ferric chloride, stannic chloride, sulphuric acid and sodium hydroxide cause an exothermic explosive reaction.⁷ Hence the necessity of avoiding contamination with metals and metal salts such as ferric salts. Less effective catalysts are sodium chloride, calcium hydroxide, anhydrous hydrogen chloride and acetic acid.

With a solution of sodium chloride, sodium β -chloropropionate is formed plus sodium β -(β -chloropropionyloxy)-propionate.



Beta-propiolactone reacts readily with water to form hydracrylic acid (beta-hydroxypropionic acid). A 1 per cent solution in water at 20°C loses 50 per cent activity in three or four hours.



This reaction is accelerated by heat and retarded by refrigeration. Hence the use of cold 10 per cent solutions in the sterilisation process described later. A 3 per cent solution of beta-propiolactone at 4°C loses approximately 3 per cent of its lactone form in 60 minutes.

Beta-propiolactone reacts with amino,⁸

carboxyl,⁹ hydroxyl, phenolic¹⁰ and sulphhydryl groups which are found in many proteins. It has strong bactericidal^{11, 12} sporicidal and virucidal²⁰ properties and is not normally inflammable or explosive.

Hoffman *et al* (1966)¹² state that 1 gallon of beta-propiolactone will effectively sterilise 25,000 cubic feet of space in two hours at room temperature. A relative humidity of 75 per cent or more is needed and care must be taken to ensure that the vapour circulates uniformly throughout the room. It is also essential that the beta-propiolactone has been correctly stored in a refrigerator. If stored a year or more at room temperature, 15 per cent or more polymer may form, which will not evaporate when disseminated as a fine mist in the air. It settles as sticky, water insoluble droplets which are difficult to remove.

It should be noted that the vapour concentration in rooms drops quickly if highly absorptive rugs and curtains etc are present. Nylon and polystyrene are disintegrated by beta-propiolactone and polyvinyl articles are deformed after long exposure.¹³

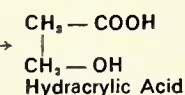
The following¹⁴⁻¹⁷ describes a method of sterilising pig heart valves (Lo Grippo *et al*). They are immersed in 1 per cent beta-propiolactone in water and incubated at 37°C for one hour. At the end of the sterilising process the incubation is continued for a further hour to complete the hydrolysis of residual beta-propiolactone to hydracrylic acid, hydracrylic polymers and sodium β -chloropropionate.

The items first assembled were:—

Fresh pure beta-propiolactone (99 per cent) stored in a refrigerator at -15°C (Betaprone, Fellows Testagar, Fellows Medical Manufacturing Co Inc, Detroit, Michigan, U.S.A.)

Envelopes containing 4.2 g sodium bicarbonate BP

Water for injection in 500 ml M.R.C. bottles stored in a refrigerator at 0°C – 4°C
Phenol red indicator solution (B.D.H.), 100 ml
Sterile Hank's solution, 400 ml in wide-mouthed bottles sealed by Subaseal rubber-skirted caps. Just before use 10 mls (or a sufficient quantity) of



sodium bicarbonate 1.4 per cent solution was added aseptically from a sterile syringe to a final pH 7.3–7.6
Ampoules of 10 ml sterile solution of sodium bicarbonate 1.4 per cent w/v
Sterile phosphate buffer solution pH 7.4. 500 mls in A.M.S.C.O., Square-Pak bottles
Thick household rubber gloves
Clean dry 1-ml and 5-ml pipettes clearly graduated with 0.1 ml markings

Fortuna safety pipetting holder. (Fortuna W. G. & Co, Germany) for 5-ml pipettes

Stoppered 25-ml graduated volumetric flasks containing 20 ml of freshly distilled water (0 – 4°C)
Water-tight screw capped jars graduated at 225 ml and containing 225 mls of ice cold sterile 0.9 per cent w/v sodium chloride solution. (We used jars 8.5 cm high x 10 cms diameter)

10-ml and 20-ml sterile disposable syringes with no. 1 disposable needles

Trimmed pig heart valves removed as quickly as possible from freshly slaughtered pigs and placed in sterile cold normal saline. After rinsing, the valves were transferred to a screw capped jar of ice cold sterile normal saline and refrigerated (0 – 4°C)

Several dissecting forceps 6-11 in (sterile)

Sterile face masks, caps, gowns and gloves for aseptic transference of sterilised specimens in aseptic room.

A ward trolley with removable easily washed top (2×1.5 ft) was used as a work bench. The operators hands were protected by the thick rubber gloves. The next procedures were carried out in a well ventilated room with precautions to avoid inhalation of the beta-propiolactone.

0.3 ml of phenol red indicator was pipetted into the jar containing 225 ml of isotonic saline: 4.2 g sodium bicarbonate was added and the jar well shaken to dissolve the powder before adding the pig heart valve.

Forms globules

A Fortuna safety pipette holder was attached to a dry 5-ml pipette and 2.2 ml of chilled beta-propiolactone was pipetted into a 25-ml graduated flask containing 20 ml of chilled sterile water. The used pipette was placed in a jar of water for washing later.

Pure beta-propiolactone (S.G. 1.149) will form globules on the bottom of a flask of water. Any crystallisation or cloudiness at this stage, suggests some decomposition and such solutions should be rejected. The flask was stoppered and vigorously shaken until solution was complete. Ice cold distilled water was added up to the 25-ml mark.

The 25-ml flask of 10 per cent beta-propiolactone was quickly emptied into the jar, the cap screwed down and the jar inverted several times. This ensured that all parts of the specimen were wetted by the sterilising solution and also all parts of the inside of the container. It is important that the screw cap and tissues are quickly made wet and kept wet with the solution. The jar was placed in an incubator at 37°C for 2 hours. The hydracrylic acid formed was neutralised by the sodium bicarbonate so that the pH instead of falling to about 3.8 was maintained above 7.0 (indicated by the faint pink colour of the phenol red).

The jar of solution now contained no beta-propiolactone and so contained no sterilising agent or carcinogen. All future handling of the specimen was carried out under aseptic conditions.

The jar was transferred through a UVR hatch into an aseptic room. The artery (valve)

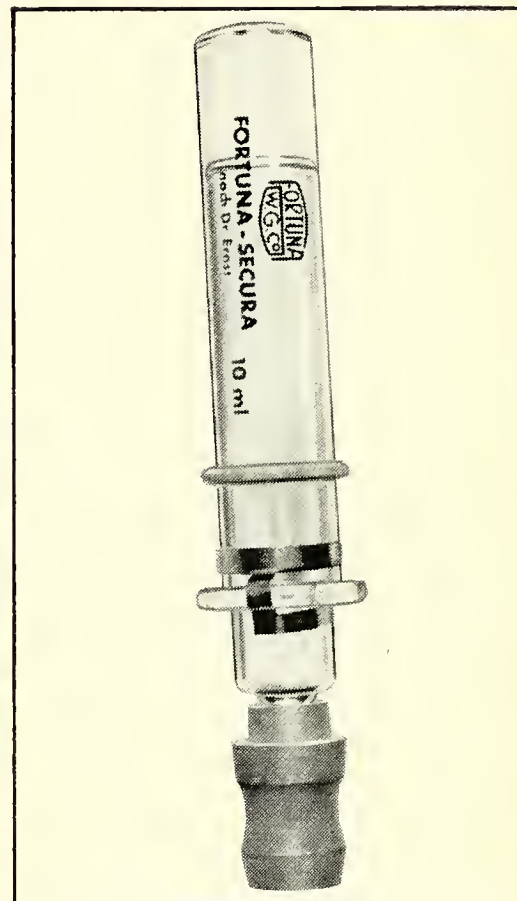
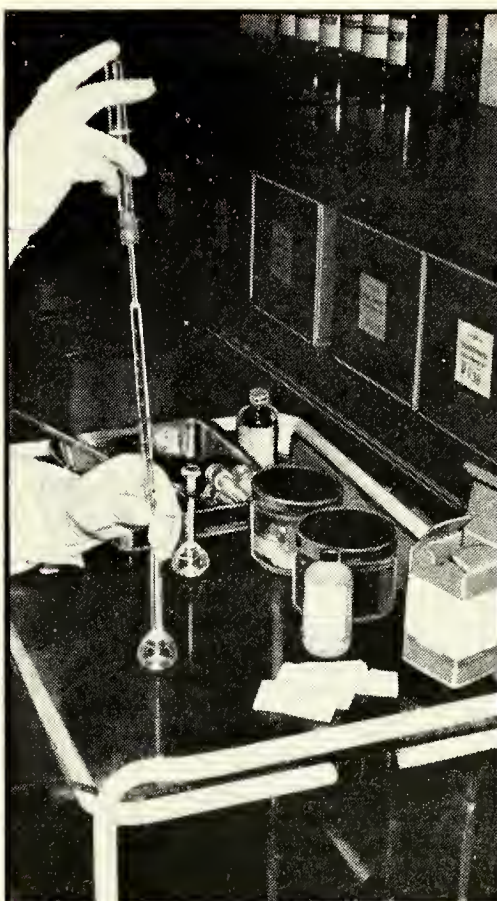
NIQUE STERILISING AGENT

was washed with 0.2 M phosphate buffer solution (pH 7.4) under a UVR screen and finally stored in a wide-mouthed bottle containing 400 mls of sterile Hanks Solution. After 24 hours storage at 0–4°C a sample of the liquid was withdrawn through the cap for sterility tests. To minimise subsequent contamination, benzyl penicillin (200 units/ml) and streptomycin (1 mg/ml) were added. We had difficulty in obtaining suitable bottles and caps for the storage of the tissue, and sometimes used 540 ml MRC bottles and screw capped jars (8½ × 10 cm diameter). Lo Grippo *et al* recommended a Fenwall cylindrical Pyrex container, 350 ml capacity with Telovac rubber diaphragm.¹⁷

I wish to thank Mrs. E. Watson, MPS senior pharmacist sterile fluids laboratory, Edinburgh Royal Infirmary, for her constant help.

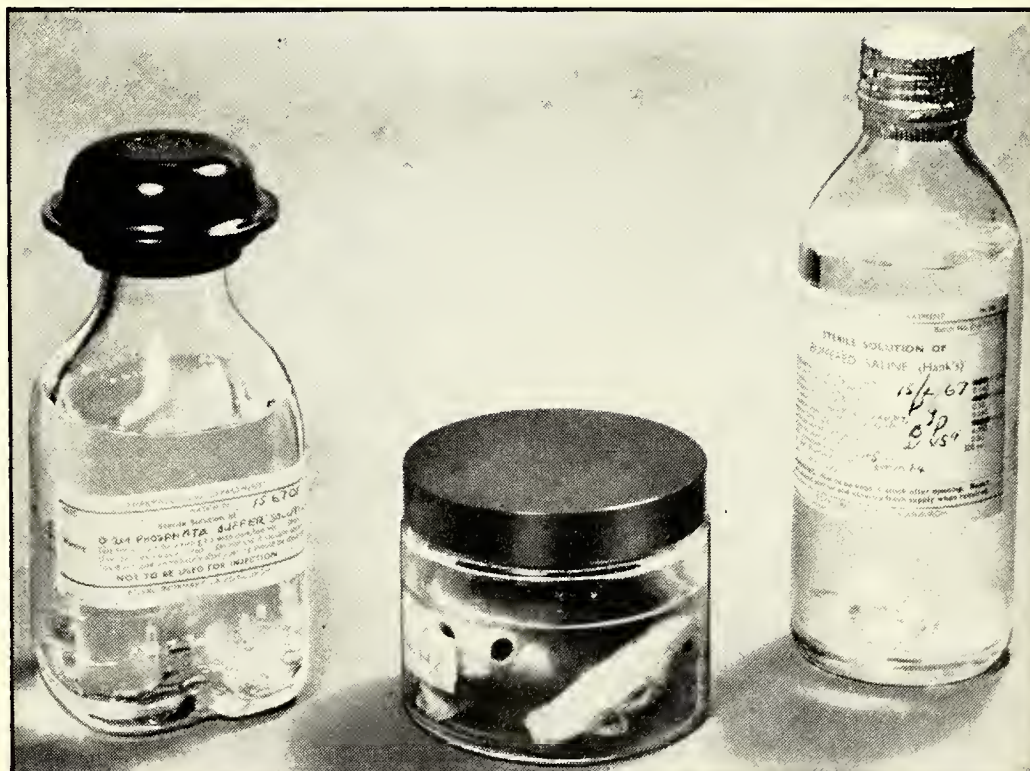
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Pipetting preparatory to diluting the beta-propiolactone, and a Fortuna safety pipette

Left: Amsco Square Pak bottle containing phosphate buffer solution, centre: Aortic arch (pig) in one per cent beta-propiolactone solution, right: Sterile heart valve in Hank's solution



LETTERS

New menace

A new menace is arising within our ranks. I feel for the pharmacist who has the better-class toiletry agencies: i.e., Cyclax, Chanel, Lenthéric, Revlon, Rubinstein, to name a few. He has built up his business in these agencies and carries the requisite stock, employs the trained assistants, and in general gives a service to the public that is expected both by them and by the firms concerned.

Now we have the newly established, usually young, grabbing pharmacists who cannot get the agency but, by the disloyalty of another pharmacist or through a friend who has an agency, stocks the quicker-turnover lines of this merchandise, gives no service whatsoever, and filches this business from his colleague nearby.

Will all the agency firms concerned give an assurance that they will cut off supplies to these pirates, and thus establish between principals and agents the confidence that can only reflect to the benefit of both parties?

S. S. Parker,
South Harrow, Middlesex

Wholesaler's service

Some of your correspondents must be extremely unfortunate in the wholesalers they deal with. Perhaps this is a result of duplication of effort? We deal principally with two firms.

A is a general wholesaler 60 miles away, who 'phone at 9.15 am and deliver between 2 and 2.30 pm, the driver making a round trip of 180 miles daily. They deliver five days a week, as the driver obviously cannot reach us on half-day closing.

B is an ethical branch of a general wholesaler. The parent company is 50 miles away (in the opposite direction to A) and previously 'phoned us daily.

Now we are served twice daily from B who are a mere 20 miles away. They 'phone for ethicals and those counter lines made by ethical companies at 2 pm for delivery at 3.30 pm and at 5 pm for delivery next day at 10 am. Additions may be 'phoned at night for recording, or in the morning up to 8.30 am.

Lines not stocked, if not obtained from A, are ordered from the parent company, and sent on the ethical van the following day. This firm notify us of all out-of-stocks within an hour of the order being placed, and ask what action is to be taken (cancel or obtain). They also have enough sense to send the nearest pack if an ethical is out of stock, so that the customer can be given part, if not all, of a script.

Both firms adopt the system that goods returned within 24 hours (due to duplication of order, death of patient, wrong item ordered or sent, etc.) are cancelled from the invoice. After this time they

have to be charged and credited in the usual time and money-consuming way.

This, then, is the system, and generally it works, as is shown by the figures for the week including Bank holiday Saturday, chosen as it is the last complete week for which I have delivery notes, and if anything would be a difficult one for wholesalers, with staff on holiday and month ending, leading to reduced stock levels.

From wholesaler A
ordered 302 lines of which
30 were "out of stock", 10 per cent
and 6 "not stocked", 2 per cent

The out-of-stock figure may seem high, but of the items six were from one company with which I long since gave up dealing because of their dreadful deliveries, and four from another company that has enjoyed greatly increased sales. The other 20 should perhaps have been in stock, but I am now tempted to ask myself how many of the 302 lines ordered I was out of stock of, or down to the last one?

From wholesaler B
ordered 275 lines of which
10 were "out of stock", 0.36 per cent
2 "not stocked"

Again, examination of out-of-stocks shows that they were for items like Epsom salt paste for counter sale, and were supplied within 24 hours.

Wholesaler A shows *no errors*.

Normally I would have expected two or three in a week to be returned by the next van for exchange. If we had any proportion of errors then these would be daily returns for the driver (and I would change my supplier) but returns are unusual. Incidentally, both drivers collect a written order and ask if there are any returns. Few representatives can remember to do the latter.

Wholesaler B shows *one error*.

3 tubes of Betnovate ointment ordered



How much do I allow for my clothes?

2 tubes of ointment and 1 cream sent—but no hardship or cash difference there.

In conclusion I would say that on past performance I would expect few invoice errors, possibly none at all for this week, and the total value of one week's invoices would be £200 to £300 in each case.

Satisfied

Two short messages

Would you be kind enough to convey to Messrs Gordon, Benjamin, James, Frizzell, Jones, Howell and Mills [Sept. 6, p. 204], the following message:—

"Bless you Gentlemen—we never knew you cared—"

M. Millward,
Enfield, Middlesex

Please forward the following open telegram to Messrs Gordon, Benjamin, James, Frizzell, Jones, Howell, and Mills at Belfast:

"Would love to be with you, but, along with Messrs Blum, Burk-Jones, Millward and twelve thousand others I work for my living."

Norman Buckley,
London, SW 11

Not Eire, but Ulster

In your issue of August 30 a letter appeared under the heading "Against Everybody." This was signed by "Denis Grant, Limavady, Eire."

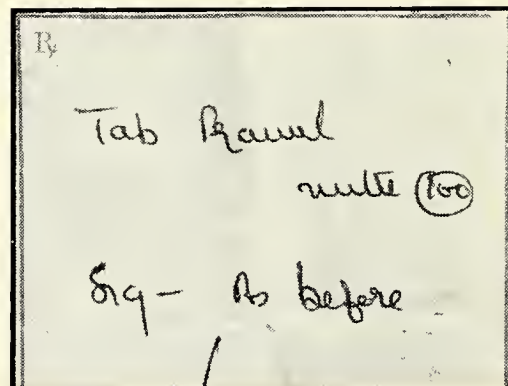
If Mr Grant really lives in Limavady he must know that it is not in Eire but in the Six Counties of Northern Ireland or Ulster. No part of co. Derry is in Eire.

W. J. Heatherington,
Huddersfield, Yorks

[Regret the error was ours. No bias was intended.—Editor.]

Prescription poser

Sent in by a pharmacist in Rhyl, the prescription shown below "had me puzzled," he said, until the patient produced a sample tablet whose markings provided an unmistakable clue.



**NEW
STRENGTH**

80



5ml. vial of 80 i.u. per ml.

Acthar Gel

**Only Acthar Gel is available as an
80 i.u. solution for low volume
injections when high dosage
therapy is instigated**

**Ample stocks of this new strength
Acthar Gel are available from your local
wholesaler**

Presentation

**Acthar Gel is ACTH Gel Inj. B.P.
a long-acting form of ACTH**

Packs and Basic NHS Prices:

5	ml.	vial	of	80	i.u.	per	ml.	53/-
5	ml.	vial	of	40	i.u.	per	ml.	26/6
5	ml.	vial	of	20	i.u.	per	ml.	16/-
2	ml.	vial	of	40	i.u.	per	ml.	11/6



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Full information is available on request

BONUS

POTTER'S Catarrh Pastilles

A Relief For CATARRH, COLDS, COUGHS & HAY FEVER

To help you breathe freely again, suck a Potter's Catarrh Pastille as often as required. Breathe through the nose to enable the decongestant and antiseptic properties to act directly upon the respiratory system.

FORMULA: 01 Pine Sylv. 0.41 01 Pine Pumil 0.41 01 Eucalypt 0.02 Cineol 0.2 Menthol 0.83 Thymol 0.02 Aqueous extractive from Alimaea 0.5 Basis to 100.0

NET WEIGHT 45g



Registered
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POTTER & CLARKE LTD CROYDON SURREY ENGLAND

The top-selling Catarrh Pastille on BONUS again

3 doz. - 11 doz. inclusive - 13 charged as 12.
12 doz. and over - 14 charged as 12.
On orders of 6 doz. and over where at least
3 doz. other pastille flavours are included, the
bonus on P.C.P. will be doubled to
14 charged as 12.



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Get ordered

New
Sugrosa
brings
demand
on a big
scale



Sugrosa's the *new* sweetener without saccharin.

That means no saccharin aftertaste. And no calories, of course.

It's the sweetener slimmers can live with—the sweetener they'll be seeing a lot of. Heavy advertising in the Daily Sketch over the next few months is bound to bring your customers in asking for new Sugrosa. Make sure you're ready for them!

Stock up with

NEW SUGROSA

with the new sweet taste—No calories. No saccharin

As featured in the

Daily Sketch

COMMENT COMMENT COMMENT COMMENT COMMENT

Further outlook: unsettled

The motion which was put before members of the British Pharmaceutical Conference at the closing session of the Belfast meeting (see p 228) was a simple matter of principle. It would transfer responsibility for organising the Conference from the Conference Executive to the Pharmaceutical Society of Great Britain and empower the Executive to make arrangements for the transfer.

In the form in which the resolution was passed, however, it contained an important proviso. The transfer was to be subject to approval of the arrangements at the Leeds Conference in 1970.

There were differences of view between platform and the proposer of the amendment about the effect of the proviso. Mr Howells was clear that the principle of transfer was approved by the vote, Mr Benjamin no less certain that, if the arrangements did not secure approval at Leeds, the transfer would not go through.

Whichever interpretation is correct the result is likely to be the same, except that non-approval of the arrangements will not be the end of the matter but will leave the Society open to put forward new proposals that stand a better chance of acceptance.

From all points of view, therefore, it is to be hoped that due note will be taken of the points made by speakers at the closing session, and perhaps the views of others canvassed, so that the proposals when put forward, will be satisfactory to the greatest numbers.

Meanwhile the Conference arrangements for 1970 and almost certainly in 1971 (owing to the need for more than a year in which to plan any given Conference meeting) will continue on the present basis, though there are minor changes that might be suggested from this year's experience.

For example, what might be called the "fringe" activities such as the sherry parties of the Institute of Pharmacy Management and even of the president, had to be sandwiched within intervals of too short duration. It might be a good plan to allow an evening in which they could be going on simultaneously in more than one room. Any

member with more than one invitation would surely be happy to move from one to the other.

Similar provision might also be made for smaller discussion groups on matters of limited or specialised interest.

It was noteworthy that, while the proportion of women on the pharmaceutical register rises, their proportion at Conference meetings is very much smaller and hardly rising. This may be due to diffidence on the part of young female members in going unpartnered to a Conference. Perhaps the National Association of Women Pharmacists could take on a new function by appointing its own band of stewards or welcomers at the signing on, or even to circularise among its members beforehand, in order to stimulate attendance in twos and threes, the names of other members known to be intending to be present.

Public relations for hospital pharmacy

Another reflection arising from the closing session at Belfast concerns public relations. The image of the hospital pharmacist in the minds of the general public may be correctably poor (perhaps even non-existent) through their own fault. Speaking of the proposed hospital pharmacy professional section of the Conference Mr George Raine (president of the Guild of Public Pharmacists) declared: "We prefer to discuss matters away from the glare of publicity," apparently being afraid that national Press reporting could harm their cause.

Another speaker, Mr S. Durham, had described the Conference as "the shop window of pharmacy." If the hospital pharmacists are not prepared to dress their window, can the public be blamed for assuming they have nothing to offer? As Mr Raine himself indicated, confidential infighting, is best conducted in the closed meetings of the Guild.

At periods in its history the Council of the Society has taken a similar attitude towards publicity, but in recent years has realised the advantage of disseminating information, even at the risk of provoking criticism.

It has gained, not lost, prestige by that policy and the same could be equally true of the hospital pharmacists.

MEDICAL PRESS

Safety of long-term phenylbutazone

Prolonged antirheumatic therapy with phenylbutazone or oxyphenbutazone is well tolerated by most patients, reports a worker in New Jersey, US.

The conclusion is based on a study of 562 patients who received one or other of the drugs in doses of 100-800 mgm daily for periods of from two to ten years. Most patients received less than 200 mg daily.

Adverse reactions were recorded in 42 patients but necessitated withdrawal of

medication in only four of them. The author considers that the low dosage contributed considerably to the mildness of adverse reactions and the relative safety of long-term therapy. (*Lancet*, September 6.)

Increase in poisoning admissions

Admissions to Edinburgh poisoning treatment centre have doubled in the past five years, workers at the centre report. In 1968, the figure was 1,067.

Barbiturates headed the list of poisons, being involved in 26 per cent of the cases. Aspirin preparations were encountered in 14 per cent of cases, benzodiazepines in 12 per cent and Mandrax in 10 per cent. Ninety-four per cent of poisonings were deliberate. Seven patients died.

The centre has for many years admitted all adult cases of poisoning. (*British Medical Journal*, August 30.)

Contemporary themes

Adverse reactions with long-term use of phenylbutazone and oxyphenbutazone. *Lancet*, September 6, p 535.

BCG vaccination and tuberculin-positive (Heaf-test grade 1) children. *Lancet*, September 6, p 537.

Termination of pregnancy using "utus" paste. *The Practitioner*, September 1969, p 324.

Measles vaccination in general practice. *The Practitioner*, September 1969, p 352.

Treatment of warts with dexamethasone. *The Practitioner*, September 1969, p 356.

Antimicrobial activity of dimethyl sulfoxide against *escherichia coli*, *pseudomonas aeruginosa* and *bacillus megaterium*. *Journal of Pharmaceutical Sciences*, July 1969, p 836.

Experience on the safety and effectiveness of 45/20 vaccine under field conditions. *The Veterinary Record*, September 6, p 269.

Anthelmintic action of levamisole injection in cattle. *The Veterinary Record*, August 30, p 264.

BRITISH PHARMACEUTICAL CONFERENCE

SECOND PROFESSIONAL SESSION

Drug dependence

International control

by M. M. Glatt, MD DPM

To protect the individual and society against drug abuse, national and international control must go hand in hand. Countries differ between those that grow and manufacture narcotic drugs and those that do not. But all states require an adequate system of legislation, regulation, administration, suppression and treatment. In order to achieve the best results states must pool their knowledge and experience, and integrate the national controls into an international system.

Whereas 60 years ago, when the first steps towards international control were taken, it was mainly the menace of misuse of the "natural narcotic drugs" stemming from the underdeveloped countries that aroused international disquiet, in modern times such danger may result more from the ready availability of synthetic narcotic

psychotropic central nervous system depressing or stimulating drugs in the highly industrialised states than from the illicit import of drugs emanating from the East. No country can be completely without interest in the state of drug control in other countries.

In 1912, the International Opium Convention signed at The Hague, formulated principles for the international control of drugs. Manufacture and trade in medicinal opium, opium alkaloids and cocaine, and their salts, were justified only by medical and scientific needs; production and distribution of raw opium was to be controlled, and manufacture and use of prepared opium gradually suppressed; and governments were to establish national control of manufacture and distribution of opium derivatives. The Convention did not come into effect until ratification of the peace treaties in 1919/20. After the war, the duty of supervising the execution of the agreements fell upon the League of Nations, which established an Advisory Committee on Traffic in Opium and Dangerous Drugs. The committee met regularly during the inter-war years until 1939. After the second world war its functions were taken over in 1946 by the Commission on Narcotic Drugs of the United Nations. Among several projects taken up by the new commission, was the Single Convention.

Disquieting findings

Preliminary investigations carried out by the Advisory Committee in the early 1920s resulted in disquieting findings. For example, authorised factories manufactured much more than was needed for medical and scientific purposes. A second Opium Conference at Geneva in 1925 resulted in the Geneva Convention (in force from 1928). The convention introduced a system of licensing and recording of all transactions involving narcotic drugs and governments were requested to provide detailed statistical information.

The task of watching the functioning of this system was given over to the newly-created Permanent Central Board, now the International Narcotics Control Board.

Despite those attempts at control, both illicit traffic and drug addiction continued to spread. That led to another (Geneva) conference which concluded the 1931 International Convention for Limiting the Manufacture and Regulating the Distribution of Narcotic Drugs. To achieve its aim, the convention introduced compulsory estimates by countries yearly in advance.

A newly created Drug Supervisory Board (D.S.B.) was to examine the estimates and publish an annual statement. The D.S.B. was also authorised to establish

estimates for countries that had not furnished them, whether parties to the 1931 Convention or not. Less satisfactory was the outcome of the Convention of 1936 for the Suppression of the Illicit Traffic which finished with laying down no more than general principles.

After the 1939-45 war the work was resumed in 1946, when the Economic and Social Council of the United Nations established the Commission on Narcotic Drugs. Fifteen members representing the important narcotic drug-producing or manufacturing countries and countries with a serious illicit traffic in narcotics. The Protocol of 1946 (in force two years later) amended the previous agreements and conventions on narcotics. In 1961 council membership was increased to 21 countries, including countries with a serious drug addiction problem and providing for the first time for the election to the commission of non-members of the United Nations.

Single convention

The Single Convention of 1961—in force from 1964—was the culminating point of efforts at international control. It aims at bringing under national and international control all narcotic substances, and takes the place of all previous conventions on narcotics. At the national level it provides for control on production, manufacture, distribution and possession, of the internal trade in drugs, and of violations at the international level, for control of import of and the international trade in narcotics, for transmitting estimates and statistical returns to the I.N.C.B., furnishing information to the U.N. Secretary-General, and mutual assistance of states for control purposes.

The Convention lays down that the consumption of narcotic drugs is allowed on medical prescription only, and outlaws the non-medical use of narcotic substances, and their preparation. Possession is permitted to authorised persons only. Possession, trade, distribution, import, export, manufacture and possibly cultivation is allowed by state or state-licensed private enterprises only. States are obliged to supervise constantly all activities related to narcotic drugs and to keep precise records.

Beyond the control aspect, the Convention asks states to give special attention to the provision of facilities for the treatment, care and rehabilitation of addicts.

The need for study of Indian hemp was raised at the first International Opium Convention in 1912. In 1923 South Africa suggested including Indian hemp as a habit-forming drug in the international convention. At the Second Opium Conference (1925) which led to the 1925 Inter-



Dr M. M. Glatt

national Opium Convention, the Egyptian (and the Turkish) delegate proposed the inclusion of hashish among narcotics to be dealt with by the conference. After some discussion the proposal was accepted.

After several other inquiries and reviews, in 1961 the Conference for Adoption of the Single Convention on Narcotic Drugs decided to include cannabis and cannabis resin (like heroin) in the Fourth Schedule (complete prohibition).

The U.K. (and France) had indicated in the plenary discussions that the cannabis problem was of little concern (!) in their countries, and requested that it should be left to governments to decide on complete prohibition.

In 1963 the commission, whilst agreeing that "there might be some variations in the type of national control," stressed that "the principle (of subjecting cannabis to the strictest régime of control) as such could not be called in question." In 1968 the commission recommended governments to increase their efforts to eradicate the abuse and illicit traffic in cannabis, should promote research and should deal with publicity advocating legalisation or tolerance of the non-medical use of cannabis as a harmless drug. In its final report in 1967 the Permanent Central Narcotics Board reiterated its adherence to the decision of the 1961 conference.

Other drugs

The stimulants, sedatives, tranquillisers and hallucinogens—have, except for some hallucinogens, only recently come into use. Attempts at controlling them internationally began only during the past 15 years.

Of "psychotropic" substances the most recent to arouse public disquiet are the hallucinogens.

The substances are outside the scope of the 1961 Convention.

At early meetings emphasis was laid on the need for strict control at national level. Growing barbiturate abuse later aroused increasing concern. It became clear that the tide of abuse of amphetamines, barbiturates, and tranquillisers, especially among the young, was not being stemmed. The commission therefore established a special committee to consider control.

The Narcotics Commission stressed the need to apply common control criteria to those substances and recommended strict national control measures as the first step towards international control.

It was decided to search for the best form of treaty action of applying national controls by international agreements, and of some measure of international control.

At a further meeting of the Narcotics Commission a draft resolution was adopted recommending the application to amphetamines of national control measures closely resembling those provided by the Single Convention to Schedule I substances. In the U.K., the Home Office has now asked manufacturers or large-scale dealers in the amphetamines for voluntary co-operation in implementing the resolution.

Measures to bring psychotropic substances under international control therefore seems to be a matter of time only.

Pharmacists' role

by J. R. Dale, MSc, LLB, MPS

Every pharmacist knows that, of the drugs made and sold, dispensed or supplied each year, drugs of dependence comprise only a part. They present special problems, but so do all other drugs. Problems of sterility and problems of chemical or therapeutic incompatibility concern the pharmacist only and the patient may never even be aware that they exist. It is the proper function of the pharmacist, indeed his duty, to scrutinise prescriptions for errors and overdoses. When selling medicines, he should ensure that the customer is supplied with the right medicine for the required purpose and should satisfy himself that the patient or customer knows how to use or take the medicines supplied.

It is not uncommon for patients, through lack of knowledge, to buy proprietary medicines that contain one or more of the ingredients of medicines already prescribed for them. Similarly, two proprietary medicines having a common ingredient may be purchased with a view to taking them concurrently, if possibly for different purposes. Even if the ordinary member of the public examines the formula declared on the container the names used often mean nothing to him. The pharmacist should therefore always have in mind that kind of possible duplication and advise his customer of it.

It has always seemed to me that the rather artificial division of medicines into "poisons" and "non poisons" has created the unfortunate impression that those not classed as poisons are completely innocuous. The Medicines Act 1968 impliedly recognises that medicines are primarily to be sold from pharmacies, but introduces a general sale list of medicines not considered to require the supervision of a pharmacist. It does not recognise that all medicines are potentially harmful. Pharmacists treat, or should treat, all transaction in medicines with equal care.

Control by the profession

All this is mentioned to demonstrate that pharmacists do in fact apply control, in greater or lesser measure, over any drugs they distribute. Drugs of dependence may call for extra vigilance, but the basic principle of care is the same. Other groups of drugs have also, from time to time, caused concern to pharmacists and the Society without attracting much public attention. The Council frequently advises members concerning drugs.

When the first Dangerous Drugs Act came into force in the early '20s there was no serious drug addiction problem in these islands. The numbers of people addicted to morphine—commonly in the form of opium preparations—seemed to remain more or less stable. Nevertheless, in 1937 and again in 1949 the Council warned pharmacists about the dangers of selling diluted laudanum, particularly for administration to infants.

The so-called "therapeutic explosion" was just getting under way in the late



Mr J. R. Dale

'30s. The first of the amphetamines, beta-amino-propylbenzene, was marketed in 1936 as Bensedrine, and the progress of this group of drugs is virtually the story of the drugs of dependence, its results apparent today. In January 1939 the drug was included in Part I of the Poisons List, except when in inhalers. There were soon references in the Press, both lay and professional, to the uses and misuses of amphetamine. As it was placed in Schedule 1 to the Poisons Rules at the time it was made a Part I poison, sales could be made only to those to whom—as the Act puts it—it could be "properly sold." There were reports of forged prescriptions. Letters as early as 1937 indicated that some pharmacists thought that it ought not to be supplied except on prescription.

In 1956 amphetamine was added to Schedule 4 to the Poisons Rules, and so could be obtained by the public only on prescription. That reduced the amount reaching the public though the majority of pharmacists were already applying some voluntary restriction. Amphetamines were by then firmly established as stimulant drugs and the problem of their abuse remained. A demand for nasal inhalers containing Bensedrine had already been noticed—a demand that greatly increased when the tablets were restricted to supply on prescription. The Society had correspondence with various manufacturers and many altered the formulas of their inhalers or withdrew them from use. In due course, the Schedule 4 exemption in favour of inhalers was withdrawn.

By 1956 the amphetamines had been joined by the "tranquillisers," which were in great demand. Each new one introduced was claimed not to be habit-forming, but each time events showed otherwise.

In August 1956 the Society's Council published a statement advising pharma-

cists not to supply drugs of that class unless they were to be taken on medical advice. It also drew the attention of the Minister of Health to the dangers of the situation. Other statements issued at various times concerned individual drugs such as methylpentynol, Librium, and carbromal and bromvaletone. Drugs came on to the market at a far greater rate than the legislative machinery could deal with them, and in August 1959 a complete list—amounting to 73 proprietary names—of drugs which either depressed or stimulated the central nervous system, but were not yet subject to any legal control, was published, accompanied by a reminder that the Council considered that they should not be supplied except on prescription. An additional list was published in April 1960.

Calls for legislation

That action was welcomed by most pharmacists. Chief comment was that legislation was the only effective control and that, as some pharmacists might ignore the Council's advice, the others should not be expected to abide by it. So it was decided to send a further statement by letter to each pharmacist. The points of criticism were effectively answered and the document seems equally appropriate today. A particularly relevant extract reads thus:

"... pharmacy cannot put its responsibility on Parliament or on Ministers such as the Home Secretary in his rule-making capacity. The pharmacist is responsible for his own actions and each individually shares in the responsibility for those of his profession. Pharmacy must make its own decisions on conduct since it is a calling claiming to have an expert knowledge of drugs and their properties. It should give a lead and stimulate other authorities by its example. If it waits for others to act, it will be abrogating its claim to authority in the field of drugs. Members of the public are entitled to expect pharmacy to set the standard in protecting their interests..."

The interim report of the Brain Committee, published in 1959, contained a recommendation that any drug having an action on the central nervous system, and liable to produce physical or psychological deterioration, should be confined to supply on prescription. So the Council's action was vindicated.

It was not long before all the drugs concerned were placed in Schedule 4, but about that time the nature of the problem began to change. About the middle 1950s there developed rapidly a demand for drugs merely for stimulation.

The view was expressed both inside and outside Parliament that some control of possession of amphetamines was essential. The Society made a statement on the subject, adding the comment that the main safeguard against abuse was a much greater sense of responsibility in the public towards medicines of all kinds. Control of possession came about in the Drugs (Prevention of Misuse) Act 1964, which also regulated to some extent the import, manufacture and wholesaling of certain drugs.

Tracing the source of illicit drugs is almost as difficult as establishing the cause

of the increase in drug dependence. Certainly some drugs are stolen from pharmacies, factories and warehouses. In 1968 there were at least 300 such thefts.

Forged prescriptions account for some. Most pharmacists have had experience of detecting an altered prescription or a forgery. Sometimes the guilty party has a period of success before suspicion is aroused. How many are never detected can only be a matter of speculation.

There is the special problem of those few doctors who seem to prescribe drugs of dependence irresponsibly. They have caused trouble disproportionate to their numbers.

When the prescribing of heroin and cocaine for addicts was limited by law to certain licensed medical practitioners, the irresponsible prescribers switched to injectable methylamphetamine. The then Ministry of Health dealt with that development by arranging a voluntary restriction of supplies through hospitals. The Society's Council gave reluctant support to the move though it was introduced hastily and with little or no consultation. The principle that a drug should be available only through hospitals is not one which the Council can accept with equanimity.

A new problem created

The Ministry's action solved the immediate problem only to create a new one. Certain doctors began to order powdered amphetamine sulphate with a view to the recipients making their own injections. This time the Council authorised publication of a statement advising pharmacists not to dispense prescriptions of that kind. They did so only after lengthy debate, as such action on the part of a pharmacist was entirely foreign to the established relationship between the medical and pharmaceutical professions concerning the handling of prescriptions.

The medical profession regards as sacrosanct a doctor's right to prescribe whatever he considers best for his patient and, no doubt, in ordinary circumstances the principle is one which no one would dispute. But the prescribing of a small minority of practitioners has certainly been an abuse of that principle, evoking criticism even within the medical profession itself.

Something of a precedent was established recently when the disciplinary committee of the General Medical Council ordered removal of the name of a practitioner from the Register for issuing prescriptions for drugs of addiction otherwise than for the purpose of bona fide treatment.

The situation today is that adequate controls exist to deal with any new problem relating to Dangerous Drugs. Further controls appear to be necessary over amphetamines and other "soft" drugs. It seems inevitable that in due course some international agreement comparable to the existing conventions on narcotics will come about. In the meantime it seems we can expect legislation to deal with our own immediate problems. Drugs sold over the counter in pharmacies are also the subject of experiment by drug takers. Reports



Questioner Mr I. Benjamin

from time to time indicate an unusual demand for this or that medicine. Not infrequently, the pharmacist reporting suggests that the product should be placed in Schedule 4. As the preparations in question are usually in common use for a proper purpose and their sale is already limited to pharmacies because they are Part I poisons, the need for further restriction seems undesirable, unless perhaps they were added to Schedule 1. As the doctors can, if they wish, strictly control the supply of prescription-only drugs, so pharmacists can, so far as possible, ensure that only customers who require a drug for a proper purpose are supplied. It seems regrettable that statutory control should be found necessary when the professions concerned have in their own hands the power to regulate the situation. It is equally regrettable that in both pharmacy and medicine bodies of opinion seem to prefer control by law to control by the professions themselves.

Where drugs are legitimately obtained, the pharmacist is an important controlling link in the chain of supply. In general practice, there is, perhaps, more scope than in hospitals for him to exercise direct control over what he supplies. His range of functions can be classified thus:

- (a) Supplying Dangerous Drugs and other restricted drugs against prescriptions for medicinal use.
- (b) Supplying heroin and cocaine to addicts on prescription sent from treatment centres.
- (c) Maintaining proper records of those transactions, guarding against forgeries and exercising care at all stages of the supply.
- (d) Advising the police and any other authority engaged in law enforcement relating to drugs.
- (e) Keeping a watchful eye on the sale

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Trade prices are given per dozen. Bold upright figures (2 9) in the retail column indicate the price is subject to retail price maintenance. Italic figures (2 9) are manufacturer's recommended price. Light upright figures (2 9) are a suggested guide.

=Price Advanced. R=Price Reduced. ●=New entry. D=Delete. C=Correction. /=Insert.

	Trade	Tax	Retail		Trade	Tax	Retail		Trade	Tax	Retail				
Hour (333 Cupal)	21	9	7 2	3 6	British No. 3 (184 Bronco)			D	Friar Tuck	3oz	18 0	3 7	2 6		
cture					British No. 3 (189 BT)			I	health salts grapefruit	8oz	23 6	7 9	3 9		
chromycin (746 Lederle)				D	Bronco (184 Bronco)			I	insect bite cream†		22 6	—	2 9		
phthalmic oil					Bronco (189 BT)				junior throat lozenges		17 9	—	2 3		
pension 6ml					Burson (1388 TKC)				linseed liq. compound	bag	11 8	—	1 4		
la (16 AGL)					(distributors 810 Maw)				lozenges		5 0lb	—	—		
as black and white	3	9ea	2 1ea	7 5 I	Calmic (218 Calmic)	27	0	10 0	3 10	mixed sulphur tablets	19	6	6 5	3 0 D	
opan 126 20 exp.				D	gripe mixture	70ml			D	Dol-tocol (113 Bencard)				D	
opan Record roll 120					Capricci (963 PNR) existing entry			I	Dellipoids (853 Modkem)						
facolor (16 AGL)					Capricci (936 PNR)				D5 rheumatism	60	30 0	11 0	—		
gative film CN5					creme perfumee	CR3	15	0ea	8 0ea	31 0	D6 analgesic	100	40 0	14 8	—
andard cassette					perfume	R90	33	6ea	18 0ea	70 0	D16 bronchial†	100	50 0	17 6	—
mm 12exp	5	0ea	2 9ea	8 11		R81	41	0ea	22 0ea	85 6	D17 asthma†	100	75 0	26 8	—
ersal film CT18						R88	62	0ea	33 3ea	129 0	D22 back & kidney	50	20 0	—	—
26 cartridge 20exp	15	1ea	4 11ea	74 0		R31	98	6ea	52 10ea	205 0		100	35 0	—	—
falux (16 AGL) existing entry				D		R21	133	0ea	71 4ea	276 0		250	7 6ea	—	—
falux (16 AGL)				I		R10	178	3ea	95 7ea	370 3		500	14 0ea	—	—
hgum KM	54	10ea	30 2ea	114 7		R1	237	0ea	127 1ea	492 9		1000	26 6ea	—	—
CK & CM	34	7ea	19 0ea	82 3	atomiser	R240	50	0ea	26 10ea	104 0	D13 stilboestrol				D
fascop (16 AGL)					refill	R141	26	7ea	14 3ea	55 3	Dethmor (506 Gerhardt) existing entry				
wer 10	48	4ea	26 7ea	100 11	sachet	PR1	14	2ea	7 7ea	29 6	Dethmor (506 Gerhardt)				
20	71	7ea	39 4ea	149 6	soap (3)	SR1	16	3ea	5 10ea	31 0	(distributors 430 Eucryl)				
fatronic (16 AGL)					talcum	TR3	13	3ea	7 1ea	27 6	5 concentrate	4oz	36 0	—	5 0
hguns 160B	139	10ea	76 11ea	292 0	toilet water	R7	26	0ea	13 11ea	54 0		1 lb	104 6	—	14 6
160A	215	10ea	118 9ea	450 10		R6	42	9ea	22 11ea	88 9		7 lb	44 0ea	—	73 6
dex (339 CG) †						R5	65	6ea	35 1ea	136 3		28 lb	160 0ea	—	266 0
rn and wound cream	24	0	—	3 0	atomiser	R107	29	0ea	15 7ea	60 3	plus bait	56 lb	294 0ea	—	490 0
udrox (1352 Wyeth)	58	0	—	6 6	refill	R117	22	7ea	12 1ea	47 0		1 lb	28 9	—	4 0
500ml					airomatic spray	R75	36	3ea	19 5ea	75 3		3 lb	63 0	—	8 9
12oz				D	refill	R175	24	8ea	13 3ea	51 3		7 lb	126 0	—	17 6
plex (67 Ashe)	45	0	24 1	7 6	Chasse Gardee (1469 PC) existing entry							28 lb	28 9ea	—	48 0
dy Amplex					Chasse Gardee (1469 PC)							56 lb	57 0ea	—	95 0
iril Violets (1355 Yardley)					Cologne	7028	16	10ea	9 0ea	35 0	Diamox (746 Lederle)				
fumed Cologne 1984	73	0	40 2	12 6 I		7029	27	8ea	14 10ea	57 6	sodium parenteral	500mg	26 8ea	—	40 0
fume 1991	79	0	43 6	13 6	perfume	7030	48	1ea	25 10ea	100 0	Dianimol (1023 Radiol)				
1992				D		7040	20	3ea	10 10ea	42 0	syrup	1oz	20 0	7 4	2 11
rid (235 Carteret)						7042	24	4ea	13 1ea	50 6	30z	30 0	11 0	4 5	
cum powder 120 g	30	7	16 10	4 11		7044	31	3ea	16 9ea	65 0	Dimyrl (1530 Fisons)				
tral (333 Cupal)						7045	40	5ea	21 8ea	84 0	pastilles †				
neral purpose blocks				10		7000	60	3ea	32 4ea	125 0	Dixcel (184 Bronco)				D
rior					toilet perfume	7001	86	9ea	46 6ea	180 0	Dixcel (189 BT)				I
ouble action toilet block				2 6 I		7728	24	1ea	12 11ea	50 0	Doidy (122 Bickiepegs)				
entyl (413 Lilly) †s4B						7729	40	5ea	21 8ea	84 0	cups	27	7	3 8	3 9
uid 450ml	13	2ea	—	19 8		7730	60	8ea	32 6ea	126 0	Domestos (382 Domestos)				
480ml				D	Chloromycetin (938 PD) TS						giant	25	8	—	2 6
ectrian (776 JML)					ophthalmic	vial	3	2ea	—	4 9	Dop (525 Golden)				
am 50g	24	0	—	3 0	Codis (1037 Reckitt) †DDI						shampoo large	46	4	17 0	7 0
atron (366 DR & A)				D	500	28	0ea	—	—		Drenison (413 Lilly) existing entry				D
atron (149 Cuticura)				I	Coeur Joie (936 PNR)						Drenison (413 Lilly) TS				
uer (1017 Pullin)					perfume	A90	26	7ea	14 3ea	55 3	cream	15g	9 3ea	—	13 11
ectronic flash E.200						A88	46	7ea	25 0ea	96 9	with neomycin	15g	9 11ea	—	14 11
nasin (333 Cupal)	23	6	7 9	3 6	de luxe	A31	74	0ea	39 8ea	153 6	ointment	15g	9 3ea	—	13 11
ama Calna (211 Butler)				I	toilet water	A12	89	1ea	47 9ea	185 0	with neomycin	15g	9 11ea	—	14 11
eam 500ml	48	0	—	6 0	Colistol (328 CCC)						Dunlop (396 DC)				
21	15	0ea	—	22 6	piglet doser 450ml	30	0ea	—	45 0 I		hot water bottles				
endrite (888 Newey)					Colivac (328 CCC)						Colslime	76	0	—	9 6
rgrips cushion grip	6	4	2 4	1 0	vet. 100ml	30	0ea	—	45 0 I		Cosimax	29	1ea	—	37 4
nd Street (1355 Yardley)					Corega (1178 Stafford)						Deep Sleep	24	3ea	—	31 4
stallised Cologne	2770	64	0	35 2	denture powder	18g	21	0	—	2 6	Flag	69	0	—	8 8
unce (967 Petfoods)						48g	35	8	—	4 3	Golliwog	90	0	—	11 3
ndy	58	4	11 3	1 2	Cosette (300 Cosette)						Quiltee	105	0	—	13 2
ge	74	6	14 5	2 3	Crozy Foom (1221 Thawpit)						Renown	81	0	—	10 2
	74	6	14 5	2 3	Cremodiazine (837 MSD) †s4B						Symbol	64	0	—	8 0
	74	6	14 5	2 3	200ml	8	2ea	—	12 3		house gloves				
urn-Vita (216 Cadbury) existing entry				D	16oz						Manicare	42	0	5 4	5 9
urn-Vita (216 Cadbury)					Cupal (333 Cupal)						Duobac (1413 P & S) TS				
	17	5	—	1 8	blood mixture No. 20						Duphalac (324 Crookes)				
	31	9	—	3 0	iodised	6oz	23	6	7 9	3 6	syrup	200ml	17 8ea	—	26 6
	55	4	—	5 9	burn aid cream						21	159	0ea	—	
neck (1509 C of GB)					cherry bark cough	3oz	21	3	7 0	3 3	Eade's (67 Ashe) †s4B				
eme rinse with					syrup	6oz	31	3	10 4	4 11	60	65	7	23 5	10 0
ody	6	1½	3 4½	1 0	diarrhoea mixture	4oz	21	0	6 11	3 9	120	101	0	36 0	15 0
	27	0	4 11	4 5 I	adults										
					child's										
					ginger flavour										

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	Trade	Tax	Retail
Easifix (1160 Solport)			
finger stalls leather small	10 0	—	1 3
med.	10 6	—	1 4
large	11 0	—	1 5
ex. large	11 9	—	1 6
ex. ex. large	12 9	—	1 7
Ekco (411 Ekco) existing entry			D
Ekco (411 Ekco)			
overblankets electric			
Princess single	—	—	239 6
double	—	—	290 0
twin	—	—	334 6
underblankets electric			
Daphne double	—	—	158 0
Delia double	—	—	111 11
Delilah double	—	—	139 6
Juno single	—	—	86 8
Sabrina single	—	—	117 4
Sophia single	—	—	109 6
Super Sylvia single	—	—	152 6
Super Deana double	—	—	187 6
Elsan Blue (418 E)†			
8 charges	58 6	—	6 6
16 charges	92 2	—	10 3
32 charges	148 6	—	16 6
Emko (506 Gerhardt)			D
(distributors 430 Eucryl)			
(distributors 366 DR & A)			
Erycen (117 BPL)			
tablets	500 294 0ea	—	144 0
Eskacillin (1153 SKF) T			
100 100ml	80 0	—	10 0
200 100ml	98 0	—	12 3
old packs	—	—	D
sulpha 100 and 200	—	—	D
Eskornade (1153 SKF) †s7			
syrup	150ml 72 0	—	9 0
4oz	—	—	D
Esoban (1166 Southon)			
ointment	1½lb 18 3ea	—	—
Espace (261 Christy)			D
Evan Williams (437 EW)			D
Evan Williams (1188 Steiner)			I
shampoos			
Eve (888 Newey)			I
hairgrips	5 3	1 11	10
Farleys (448 Farleys)			I
baby dinners and sweets			
vegetables and beef,			
vegetables beef and			
bone, vegetables			
chicken and tomato			
1½oz	12 3	—	1 4
apples and rice, apricot			
pudding, orange and			
lemon pudding, straw-			
berry sweet	2oz 12 3	—	1 4
Felix (455 Felix)			
cat food	—	—	1 9
Fernico (333 Cupal)			
26 3	—	—	3 9
Fete (Molyneux (194 Bronnley)			
poudre parfume	—	—	65 0
Fille d'Eve (963 PNR) existing entry			D
Fille d'Eve (936 PNR)			I
perfume			
F90	26 7ea	14 3ea	55 6
F81	34 6ea	18 6ea	72 0
F88	46 7ea	25 0ea	96 9
F31	74 0ea	39 8ea	153 6
F21	127 0ea	68 1ea	264 0
de luxe	F33 89 1ea	47 9ea	185 0
toilet water	F7 20 6ea	11 0ea	42 6
F6	32 10ea	17 7ea	68 3
F5	52 0ea	27 11ea	108 3
Freesia (1355 Yardley)			
perfume	1891 79 0	43 6	13 6
perfumed Cologne	1884 73 0	40 2	12 6
Fresh'n Dainty (506 Gerhardt)			D
(distributors 430 Eucryl)			
(distributors 366 DR & A)			I
Furacin (1153 SKF)			
solution	500ml 28 6ea	—	42 9
16oz	—	—	D
Furadantin (1153 SKF)			
suspension	150ml 96 0	—	12 0
21	92 0ea	—	138 0
4oz and 80oz	—	—	D
Furoxone (1153 SKF)			
suspension	300ml 99 0	36 4	15 5
8oz	—	—	D
Glaxo (518 Glaxo)			
vaccines			
diphtheria tetanus F.T.			D
diphtheria tetanus			D
poliomyelitis inactivated			D
poliomyelitis inactivated			D
tetanus F.T.			D
Glenrol (184 Bronco)			D
Glenrol (189 BT)			I
Guckl (16 AGL) existing entry			D
Guckl (16 AGL)			
35mm viewer	6 0ea	3 4ea	12 7 1
Haematrix (810 Maw)			
ointment	22 4	8 2	3 6
suppositories	41 0	15 0	6 3

	Trade	Tax	Retail
Halmagon (801 MP)	38 6	14 2	5 7
115 0	42 2	16 3	
Hedges (590 Hedges) existing entry			D
Hedges (590 Hedges)			I
L.260 snuff	21 6	—	2 2
45 6	—	4 5	
87 0	—	8 3	
Helena Rubinstein (596 HR)			
illumination			
luminator	—	—	45 0
souffle stick	—	—	47 6
Hill's (605 Hill's) †DDI			
bronchial balsam	100ml 30 0	11 0	4 5
200ml	50 0	18 4	7 4
Histofax (208 BW)			I
cream	17.5g 20 0	7 4	3 1
Histron (1367 R & B)			
balm	25g 18 0	6 7	2 10
50g	30 0	11 0	4 8
75g	42 0	15 5	6 6
Ilford (645 Ilford)			
cameras			
Compact outfit	37 9ea	20 9ea	77 5
Universal 50C	38 5ea	21 2ea	78 10
outfit	50 4ea	27 8ea	99 8
Universal Flash	40 0ea	22 0ea	82 0
outfit	51 7ea	28 4ea	100 11
Ilotycin (413 Lilly) T5			
tablets 250mg	100 62 0ea	—	93 0
500	301 6ea	—	452 6
1000	591 3ea	—	886 11
5000	2895 0ea	—	4342 6
Indal Finnish Sauna (961 EGP)			
bubble bath	sachets (2) 21 0	7 9	3 0
bottle 5oz	6 6ea	2 5ea	13 0
hair conditioner			
sachets (2)	18 6	10 2	3 0
bottle 5oz	7 1ea	3 11ea	16 0
shampoo	sachets (2) 21 0	7 9	3 0
bottle 30cc	22 6	8 3	3 6
6oz	6 6ea	2 5ea	13 0
4½oz	35 0	12 10	5 6
8 9ea	3 3ea	16 6	
20 1ea	8 9ea	42 0	
Isomat-Rapid (16 AGL) existing entry			D
Isomat-Rapid (16 AGL)			I
camera	165 2ea	77 3ea	331 4
outfit small	186 10ea	87 4ea	374 9
large	211 4ea	98 10ea	424 0
camera C	209 3ea	115 1ea	437 0
case	29 7ea	16 3ea	61 9
Iso-Pak (16 AGL)			
flash gun	21 11ea	12 1ea	45 10
Iso-Rapid (16 AGL) existing entry			D
Iso-Rapid (16 AGL)			I
camera I	30 7ea	16 10ea	63 11
outfit without flash	34 7ea	19 0ea	72 2
with flash	68 6ea	37 8ea	143 1
camera C	62 10ea	34 7ea	131 3
outfit	69 9ea	38 4ea	145 9
outfit IC	60 0ea	33 0ea	124 4
autotest	74 5ea	40 11ea	155 5
lady set IC	78 3ea	43 0ea	163 4
C	89 3ea	49 1ea	186 5
Kaykill (683 Kay) existing entry			D
Kaykill (1068 Roberts)			I
rodenticide	3½oz 11 5	—	1 6
12oz	29 3	—	3 9
Kemithal (649 ICI)			D
Kemoform (853 Modkem)			
balsam of aniseed	13 6	4 8	—
3oz	—	—	D
Keybells (563 Hampshire)			D
Keybells (1068 Roberts)			I
Lactate-Ringers (413 Lilly)			
solution ampoules	25 200 0ea	—	300 0
L'Air du Temps (936 PNR) existing entry			D
L'Air du Temps (936 PNR)			I
creme parfume	CB3 12 0ea	6 5ea	25 0
dusting powder	TB1 30 4ea	16 3ea	63 0
refill	TB2 17 11ea	9 7ea	37 3
perfume	B90 26 7ea	14 3ea	55 3
B81 34 6ea	18 6ea	72 0	
B88 46 7ea	25 0ea	96 9	
B31 74 0ea	39 8ea	153 6	
B21 127 0ea	68 1ea	264 0	
de luxe	B33 89 1ea	47 9ea	185 0
B30 163 6ea	87 8ea	339 9	
atomiser	B240 48 6ea	26 0ea	101 0
refill	B141 25 0ea	13 5ea	52 0
sachet	PB1 14 2ea	7 7ea	29 6
soap (3)	SB1 13 9ea	4 11ea	26 3
sparkling bath oil	MB3 16 9ea	6 0ea	31 9
talcum	TB3 11 4ea	6 1ea	23 6
toilet water	B7 20 6ea	11 0ea	42 6
B6 32 10ea	17 7ea	68 3	
B5 52 0ea	27 11ea	108 3	
atomiser	B106 39 6ea	21 2ea	82 0
B107 26 10ea	14 5ea	55 9	
refill	B117 20 11ea	11 3ea	43 6
aromatic spray	B75 32 10ea	17 7ea	68 6
refill	B175 21 0ea	11 3ea	43 9
Lavato (184 Bronco)			D
Lavato (189 BT)			I
Lem-Sip (1037 Reckitt)			
cold remedy	27 5	9 4	3 11
Leucovorin (746 Lederle)			
ampoules 3mg/ml	6 38 4ea	—	57 6

		Trade	Tax	Retail
Luma (801 MP)				
compound	trial	19 6	7 2	3 0
	medium	42 6	15 7	6 6
	large	51 9	19 0	8 0
	family	66 6	24 5	10 6
cubes		47 6	17 5	9
		(1gross)	(1gross)	
Lusty's (781 Lusty)				
kelp powder	4oz	24 0	—	3 0
	8oz	38 0	—	4 9
tablets	150	32 0	—	4 0
	500	80 0	—	10 0
	1000	13 0ea	—	19 0
tablets malted	100	27 0	—	3 4
	250	53 0	—	6 8
	750	12 6ea	—	18 9
capsules	24	24 0	—	3 0
	84	66 0	—	8 3
Lydrin (211 Butler)				
	500ml	138 0	—	16 0
	2 l	40 0ea	—	60 0
	16oz and 80oz	—	—	—
Mademoiselle Ricci (936 PNR) existing entry				
Mademoiselle Ricci (936 PNR)				
	CE3	12 0ea	6 5ea	25 0
creme parfume	E110	28 0ea	15 0ea	58 6
perfume leger	5E1	13 9ea	4 11ea	26 6
soap	TE3	11 4ea	6 1ea	23 3
talcum	E7	18 9ea	10 1ea	39 0
toilet water	E6	30 9ea	16 6ea	64 3
	E5	50 6ea	27 1ea	104 9
atomiser	E107	26 7ea	14 3ea	55 3
	E75	32 10ea	17 7ea	68 6
refill	E175	22 7ea	12 1ea	47 0
Ma Griffe (1469 PC) existing entry				
Ma Griffe (1469 PC)				
bath oil	4843	28 11ea	15 6ea	60 0
Cologne	2oz 8028	16 10ea	9 0ea	35 0
	4oz 8029	27 8ea	14 10ea	57 6
	8oz 8030	48 2ea	25 10ea	100 0
	14oz 8031	86 9ea	46 6ea	180 0
	26oz 8032	135 9ea	72 10ea	282 0
spray	8022	28 11ea	15 6ea	60 0
dusting powder	4810	20 3ea	10 10ea	42 0
perfume cream	4804	14 5ea	7 9ea	30 0
mousse douce	4829	13 2ea	4 8ea	25 0
perfume	8040	20 3ea	10 10ea	42 0
	8042	24 4ea	13 1ea	50 6
	8044	31 3ea	16 9ea	65 0
	8045	40 5ea	21 8ea	84 0
	8000	60 3ea	32 4ea	125 0
	8046	74 6ea	39 11ea	155 0
	8001	86 9ea	46 6ea	180 0
	8002	137 0ea	73 6ea	285 0
	8003	211 7ea	113 6ea	440 0
	8074	43 4ea	23 3ea	90 0
	8075	40 5ea	21 8ea	84 0
soap cartoned	4851B	6 1ea	2 2ea	11 0
	4856	8 10ea	3 2ea	16 0
talcum 90g	4811	9 7ea	5 2ea	20 0
toilet perfume	2oz 8728	24 1ea	12 11ea	50 0
	4oz 8729	40 5ea	21 8ea	84 0
	8oz 8730	60 8ea	32 6ea	126 0
atomiser	8025	20 3ea	10 10ea	42 0
	8026	43 4ea	23 3ea	90 0
evlvet foam bath	4848	24 4ea	13 1ea	50 6
Mary Quant (876 MP)				
cake liner		55 3	30 5	9 11
old pack		—	—	—
eyes off		48 9	26 10	8 9
lashes 'bird feathers'		153 2	84 2	27 6
liquid liner		55 3	30 5	9 11
waterproof liner		—	—	—
Mastop (328 CCC)				
vet.	1gal.	33 4ea	—	50 0
	5gal	153 4ea	—	230 0
Maws (810 Maw)				
Nappi pants		20 0	—	2 6
Tuffy Tail pads				
newborn	10	20 0	—	2 1
	12	—	—	—
K.L.N. suspension				
	337.05	16 2	5 11	2 6
Surgical dressings				
bandages B.P.C.				
1in x 4yd	110.18	3 9	—	6
2in x 4yd	110.02	6 2	—	9
3in x 4yd	110.04	8 7	—	1 1
4in x 4yd	110.19	11 1	—	1 5
crepe 2in	141.00	23 5	—	2 11
	2½in	141.01	28 3	3 6
	3in	141.02	33 9	4 2
	3½in	141.03	38 8	4 10
	4in	141.04	44 1	5 6
	6in	141.05	65 5	8 2
cellulose tissue	147.01	56 0	—	7 0
cotton wool B.P.C.				
½oz	100.00	6 3	—	9
1oz	102.01	8 6	—	1 1
4oz	102.03	24 0	—	3 0
16oz	102.05	80 0	—	10 0
hospital quality				
1oz	102.07	7 3	—	11
4oz	102.09	19 0	—	2 5
16oz	102.11	60 0	—	7 6
gamgee pink label				
4oz	146.09	23 3	—	2 7
16oz	146.11	78 0	—	8 8
blue label				
4oz	146.12	27 0	—	6 0
16oz	146.14	93 0	—	10 4

manufactured from licensed material

CO-CAPTETRA 250

capsule contains 250 mg Tetracycline H.Cl. BP 24/- per 100 (Basic NHS) **10% Discount** when ordered direct from CO-CAPS 361 Lillie Road London SW6 Telephone 01-370 4664 (reverse charge)

	Trade	Tax	Retail
ze B.P.C.			
d 137.02	12 7	—	1 7
d 137.03	27 9	—	3 8
d 137.04	50 8	—	6 4
yd 137.05	98 3	—	12 3
sterilised rolls			
00yd 125.05	62 10ea	—	94 6
Syd 125.06	16 1ea	—	24 2
B.P.C.			
n			
oz 120.00	8 5	—	1 1
oz 135.01	12 11	—	1 7
oz 135.03	41 6	—	5 2
oz 135.05	150 0	—	18 9
ic			
oz 143.00	8 9	—	1 1
oz 134.07	13 8	—	1 9
oz 143.09	44 6	—	5 7
oz 143.05	161 0	—	20 1
multiple pack dressings			
1 148.00	37 6	—	4 8
2 148.01	76 3	—	9 6
itus (333 Cupal)			
cough mixture 4oz	26 0	8 7	3 11
8oz	39 3	12 11	5 11
ior 3oz	24 3	8 0	3 6
6oz	34 9	11 5	5 3
nnen (S2S Golden)			
ve creams			
her/menthol			
shless/menthol 70g	23 2	8 6	3 4
packs	—	—	—
amsustac (972 Phamax)	—	—	—
ers (876 MP)			
ted powder shadows	17 5	9 7	3 0
ck shadows	17 5	9 7	3 0
r sleek wigs	66 0ea	—	99 0
ims (1154 SNP)	—	—	—
olta (667 JCL)	—	—	—
era cine 8mm	—	—	2399 6
topak 8-K7	—	—	3199 6
8-K11	—	—	—
eras instant load	—	—	420 0
PS kit	—	—	659 0
topak 550	—	—	1059 0
topak 800	—	—	—
500 and 700	—	—	—
ectors	—	—	—
odual 8	—	—	1319 6
to Dial 8	—	—	—
er-8	—	—	—
ver 16	—	—	—
hum (IS20 IPM) existing entry	—	—	—
chum (IS20 IPM)	—	—	—
-perspirant	26 6ea	9 8ea	45 0
aid	26 6ea	9 8ea	45 0
erica cream	18 6ea	10 2ea	35 0
iginal	18 6ea	10 2ea	35 0
ified	26 0ea	14 3ea	49 0
adon (1074 Roche) ts4B			
ules 100	22 0ea	—	33 0
500	88 0ea	—	132 0
ex (16 AGL) existing entry	—	—	—
wex (16 AGL)	—	—	—
equipment	—	—	—
o outfit S	small 351	1ea 167	1ea 698 8
large 425	8ea 199	1ea 844 3	
o outfit SV	488	8ea 235	2ea 978 5
aine (1352 Wyeth) ts4B			
ension 500ml	8 6ea	—	11 4
12oz	—	—	—
otarr (333 Cupal)			
lant 13oz	13 9	4 6	2 3
ro Phosphates (1153 SKF) †			
300ml 54	0	19 9	8 5
21 29	0ea	—	43 6
8oz and 80oz	—	—	—
had Tulle (34 A & H)			
in 36	28 7	—	3 8
in 10	28 7	—	3 8
in 36	52 2	—	6 8
in 36	95 0	—	11 11
8yd strip	77 0	—	9 8
obiocin (147 Boots) TS			
cure 100ml	21 7½ea	—	32 6
Spice (1131 Shulton)			
y Cologne 3120	130 0	69 9	22 6
um 3140	95 5	52 6	16 6
cream 3139	56 3	30 11	9 9

	Trade	Tax	Retail
Optima (16 AGL)			
camera Rapid 125C	274	Sea ISO 11ea	620 0
125V	—	—	—
camera 500SN	—	—	—
Or-Lem (918 Or-Lem)			
low calorie blackcurrant	—	—	2 9
drink 26oz	—	—	2 2
Sun Real whole orange	—	—	—
or lemon	—	—	—
Oxycel (938 PD)			
pad 11	0ea	—	16 6
Parstelin (1153 SKF)			
elixir	—	—	—
Phensic (104 BP)			
tablets 100	66 S	24 4	9 2
Phosferine (1082 RKO)			
tonic wine ½ bott.	161 6	—	8 11
bott. (2 doz)	151 9	—	17 0
Pied Piper (S06 Gerhardt)			
(distributors 430 Eucryl)	10 9	—	1 6
for mice	19 9	—	2 9
Pierre Cardin (1131 Shulton) existing entry	—	—	—
Pierre Cardin (1131 Shulton)			
eau de toilette 2oz	22 10ea	12 3ea	47 6
4oz	38 6ea	20 8ea	80 0
8oz	57 10ea	31 0ea	120 0
perfume 1oz	31 3ea	16 9ea	65 0
1oz	57 10ea	31 0ea	120 0
1oz	86 9ea	46 6ea	180 0
Blue Marine			
eau de toilette 2oz	20 3ea	10 10ea	42 0
4oz	31 3ea	16 9ea	65 0
8oz	50 7ea	27 2ea	105 0
Pifco (983 Pifco)			
facial sauna	1560	74 6ea	26 8ea 126 0
hair dryers			
Go-Girl 1170	S1 9ea	18 6ea	87 6
trio 1970	S8 10ea	21 0ea	99 6
Princess 1060	S7 8ea	20 7ea	97 6
ensemble 1960	90 2ea	32 3ea	152 6
beauty outfit 1962	81 4ea	29 1ea	137 6
Queen curl roller			
set 1555	118 0ea	42 2ea	199 6
infra-red lamp 1027	—	—	—
Prince shaver 1127	—	—	—
Polaroid (989 Polaroid)			
ski-goggles 52	8ea	—	79 0
Polyset (721 LC)			
clear bottle 70cc	28 3	15 6	4 9
Portia (1160 Solport)			
baby balances DS4	84 0	—	10 6
outfit D60	144 0	—	18 0
caustic pencils 15	0	—	1 11
eye bath plastic 4	0	6	7
nail brush BS18	27 0	9 11	4 0
BS19	20 0	7 4	3 2
plastic nipple shields 9	0	—	1 2
pumice stone (mouse) 12	4	6 10	2 1
bulk 9	8	5 6	1 8
styptic pencils			
carded 3" DI660C	4 0	1 6	8
2" DI663C	6 0	2 2	11
Pour un Homme (1071 Robins)			
talcum 120g	9 6ea	S 3ea	19 6
Pro-Plus (67 Ashe)			
tablets 18	22 0	—	2 9
Radian (1023 Radiol)			
bath salts 450g	34 0	12 S	5 0
3kg 16	6ea	6 0ea	29 0
6kg 30	0ea	11 0ea	53 0
old packs	—	—	—
Rayolast (130S WB)			
bandages 2in	34 0	—	3 10
3in	46 0	—	5 2
4in	58 0	—	6 5
6in	81 0	—	9 0
double length 3in	83 0	—	9 3
4in	107 0	—	11 10
6in	153 0	—	17 0
Red Ring (333 Cupal)			
chillie paste 2oz	16 4	5 4	2 6
Regulets (333 Cupal)			
laxative tablets			
carton 30	18 9	6 2	2 11
tin 12	9 11	3 4	1 8
36	18 9	6 2	2 11
Remington (1044 R)			
shavers	—	—	—
100 de luxe	—	—	159 6

	Trade	Tax	Retail
GT battery model	—	—	126 0
Ricotiv (211 Butler) †			
500ml 96	0	—	12 0
21 43	6ea	—	65 3
16oz and 80oz	—	—	—
Rimactane (262 CIBA) TS			
capsules 150mg 25	84 0ea	—	126 0
100	305 7ea	—	458 5
300mg 25	168 0ea	—	252 0
100	611 2ea	—	916 9
old packs	—	—	—
Rinoxin (S06 Gerhardt) existing entry	—	—	—
Rinoxin (S06 Gerhardt)			
(distributors 430 Eucryl)			
concentrate 4oz	46 9	—	6 6
1 lb 133	3	—	18 6
7 lb 66	0ea	—	110 0
28 lb 240	0ea	—	400 0
56 lb 471	0ea	—	785 0
readimix 1 lb	36 0	—	5 0
3 lb 79	3	—	11 0
7 lb 13	3ea	—	22 0
28 lb 43	3ea	—	72 0
56 lb 81	0ea	—	135 0
Robe d'un Soir (1469 PC) existing entry	—	—	—
Robe d'un Soir (1469 PC)			
bath oil 4943	32 6ea	17 5ea	67 6
Cologne 9028	20 3ea	10 10ea	42 0
9029	36 1ea	19 4ea	75 0
9030	55 4ea	29 8ea	115 0
spray 9022	33 8ea	18 1ea	70 0
dusting powder 4910	22 10ea	12 3ea	47 6
parfum creme 4904	18 1ea	9 8ea	37 6
perfume 9046	91 0ea	48 10ea	189 0
9045	50 7ea	27 2ea	105 0
9042	32 6ea	17 5ea	67 6
9044	36 1ea	19 4ea	75 0
9000	70 10ea	38 0ea	147 0
9001	101 2ea	54 3ea	210 0
9002	161 11ea	86 10ea	336 0
9003	250 0ea	134 1ea	520 0
9040	27 8ea	14 10ea	57 6
atomisers 9074	43 4ea	23 3ea	90 0
9075	40 5ea	21 8ea	84 0
talcum powder 4911	11 4ea	6 1ea	23 6
toilet perfume 9728	28 11ea	15 6ea	60 0
9729	48 2ea	25 10ea	100 0
9730	77 1ea	41 4ea	160 0
atomisers 9025	24 4ea	13 1ea	50 6
9026	50 7ea	27 2ea	105 0
Roger & Gallet 1076 (R & G) existing entry	—	—	—
Roger & Gallet (1076 R & G)			
bath cubes (6)	—	—	10 0
bath essence	—	—	15 0
bath oil	—	—	15 0
Cologne black label 1066	—	—	7 0
1000	—	—	12 0
1016	—	—	21 0
1017	—	—	41 0
1018	—	—	77 0
extra old 1190	—	—	9 0
1001	—	—	15 0
1002	—	—	26 0
1003	—	—	54 0
6047	—	—	28 0
lip-aide	—	—	3 6
soap guest size	—	—	—
assorted, carnation,	—	—	—
sandalwood (6)	—	—	12 0
soap toilet size	—	—	—
J.M.F. Cologne,	—	—	—
fougere, tea rose,	—	—	—
lavender, carnation,	—	—	—
muguet, violet	—	—	6 0
sandalwood	—	—	7 0
soap bath size	—	—	—
J.M.F. Cologne,	—	—	—
fougere, tea rose,	—	—	—
lavender, carnation	—	—	10 0
sandalwood	—	—	12 6
talcum	—	—	12 0
tonic foam bath (pine)	—	—	—
10 bath	—	—	14 0
20 bath	—	—	24 0
men's range	—	—	—
after shave lotion 5067	—	—	23 0
5068	—	—	32 0
deodorant spray 1104	—	—	25 0
pre-shave lotion 5062	—	—	25 0
toilet water 5057	—	—	30 0
5058	—	—	50 0
Rub-a-Dub (1160 Solport) existing entry	—	—	—

	Trade	Tax	Retail	
Rub-a-Dub (1160 Solport)				I
bath gloves				
loofah and turco	50 0	6 8	6 8	
loofah both sides	73 6	26 4	11 6	
Sanatogen (1530 Fisons)				
selected multivitamins	89 3	—	9 11	
Sanold (339 CG)				
114g baby powder	16 7	6 1	2 7	
270g	29 0	10 8	4 6	
dusting powder	16 0	8 10	2 9	
Selvigon (1153 SKF)				
100ml syrup	46 0	—	5 9	
3oz	—	—	—	D
Si-Ko (1101 Sangers)				D
Si-Ko (351 Danning)				I
Sister Lauras (1146 SL)				
16oz food	—	—	—	D
Snaplock (888 Newey)				
nappy pins (3)	8 9	1 2	1 3	
(5)	12 9	1 9	1 9	
mini (4)	10 6	1 5	1 6	
Sovol (235 Carteret)				
4oz liquid	41 10	15 4	5 11	
Stelazine (1153 SKF) †s4B				
100ml concentrate	34 0ea	—	—	
200ml syrup	90 0	—	11 3	
4oz and 8oz	—	—	—	D
Stera-Fix (1037 Reckitt)				
small	20 3	—	2 3	
large	33 9	—	3 9	
Supersoft (563 Hampshire)				
bubble bath bottle	15 11	5 9	2 4	
Takazyma (938 PD)				
30 lozenges	30 0	11 0	4 8	
100	78 0	29 0	12 2	
1000	55 0ea	20 2ea	102 8	
Tampax (1211 Tampax)				
regular	10 22 10	—	2 6	
40	80 0	—	8 9	
super	10 25 2	—	2 9	
40	88 5	—	9 8	
Tetracycline (969 Pfizer) TS				
500ml syrup	25 6ea	—	38 3	
16 oz	—	—	—	D
Therazid (1154 SNP) TS				
powders	186 0ea	—	279 0	
Thermoid (339 CG)				
cream	42g	22 6	8 3	3 6
Thio-Tepa (746 Lederle)				
parenteral vial	15mg	17 4ea	—	26 0
Three Point (1160 Solport)				
smog mask	26 6	—	3 4	
refills (6)	11 6	—	1 4	
composite pack	38 0	—	4 8	
Tried & True (813 MF)				
protein conditioner tube	45 4	24 11	7 8	
jar	87 4	48 1	14 9	
Trilene (649 ICI)				
surgical	—	—	—	D
Trill (967 Petfoods)				
large	38 5	7 5	2 4	
(2 doz)	(2 doz)	(2 doz)	(2 doz)	
Tully (16 AGL)				
flashgun K & M	42 7ea	23 5ea	88 11	
Tums (S06 Gerhardt)				
(distributors 430 Eucryl)				D
(distributors 366 DR & A)				I
Tusana (147 Boots) cough linctus				D
Valerie (888 Newey)				
hairgrips tipped	4 9	1 9	9	
Valium (1074 Roche) †s4B				
ampoules 10mg/2ml	80 8ea	—	121 0	
Varidase (746 Lederle) TS				
topical 125,000 units	34 4ea	—	51 6	
Veganin (1310 WW) †DDI				
tablets	10 15 0	5 6	2 4	
20	24 5	8 11	3 7	
50	47 2	17 4	6 11	
Velactin (1303 Wanderer)				
powder	8 9ea	—	13 2	
old pack	—	—	—	D
Ventolin (34 A & H)				
aerosol inhaler	18 6ea	—	—	I
Vers Toi (1350 Worth)				
perfume	—	—	—	
Le Medaillon	7cc	—	62 0	
Vert et Blanc (1469 PC) existing entry				D
Verton (1176 Squibb) †s4B				
tablets	28 5 6ea	—	8 3	
Vetiver (1469 PC) existing entry				D
Vigortone (918 Or-Lem)				
blackcurrant syrup	12oz	—	3 6	
26oz	—	—	5 0	
Vitathone (333 Cupal)				
chilblain tablets†	50 32 3	—	3 11	
Watersprite (1160 Solport)				
face cloths	G296	21 6	2 10	3 0
G295	23 0	3 1	3 2	
G312	26 6	3 6	3 7	
G300E	24 0	3 2	3 3	
Whiskas (967 Petfoods)				
(6 doz)	68 1	13 2	1 4	
(6 doz)	(6 doz)	(6 doz)	(6 doz)	

	Trade	Tax	Retail	
Wig Set (888 Newey)				
curlers	106 0	38 10	16 9 1	D
Yardley (1355 Yardley)				
eye liner liquid	520	39 0	21 5	6 8 I
deep emollient	512J/L	—	—	D
cleanser	52S	—	—	D
mascara	526	—	—	D
twinstick brow	528	—	—	D
pencil	529	—	—	D
velvet liner	515L	—	—	D
refill	531	—	—	D
Infinite Beauty	417	—	—	D
liplighter	581/3	—	—	D
Next to Natural	536	—	—	D
Pretty Goods	536/P	—	—	D
chalk sticks pack	550	—	—	D
finger tip polish	550	—	—	D
velvet skin	550	—	—	D
moisturiser	550	—	—	D
Zubes (563 Hampshire)				
Zubes (1068 Roberts)				

AMENDMENTS AND ADDITIONS TO KEY TO SUPPLIERS

189 BT=British Tissues (Dixcel) Ltd, 214 Oxford Street London, W.1. 01-636 4011.
351 Danning=P. A. Danning Ltd, 3 Trentham House, 5 Riverdale Road, Twickenham, Middlesex. 01-892 6536.
809 M & W=Matthews & Wilson Ltd, 225 Putney Bridge Road, London, S.W.15. 01-870 0971.
847 Milliwatt=Milliwatt Engineering Ltd., 22b The Broadway, London, N.W.7. 01-959 2283.
1070 Windsor=The House of Roberts Windsor, 14 Pall Mall, London, S.W.1. 01-630 2057.
1220 CT=Chas. F. Thackray, Ltd., 10 Park Street, Leeds, I. 0532-200 85.
1243 TBL Total Beauty Ltd., 89a High Road, London, N.22. 01-889 3543.
1427 Ceebrite=Ceebrite, Ltd., Newgate Street Village, nr. Hertford, Herts. 284 2622.

THIS WEEK'S CHANGES

Prices are given in the sequence Trade Price per Doz.: Purchase Tax per Doz.: Retail Price. Bold upright figures (2 9) in the retail price column indicate that the price is subject to resale price maintenance: italic figures (2 9) that it is recommended by the manufacturers: and light upright figures (2 9) that it is "notional" as a guide to the retailer in determining his own retail price.

Acthar (61 APC) †s4B				
intravenous 45 I.U.	48 0	—	—	C
Anapax (1053 Rexall)				
cold tablets	24 37 0	13 7	5 7	●
throat spray	7-5g	40 0	—	D
Brands (1114 SBF)				
Bioglan (127 Bioglan)				
multi-vitamin capsules	60	—	—	D
Bioglan-601 (127 Bioglan)				D
Bioglan-A (127 Bioglan)				D
ampoules and vitamin B ₁	—	—	—	D
ampoules/	—	—	—	D
Bioglan-M/Q (127 Bioglan)				D
tablets	15	—	—	I
Brands (1114 SEF)				
Comet (810 Maw)				
hair cutter	88001	73 0	26 9	12 6
spare blades	88003	29 2	10 8	3 0
(20 pkts.)	(20 pkts.)	(20 pkts.)	(20 pkts.)	(20 pkts.)
Concern (655 ICC)				
deodorant aerosol	trial	22 0	12 1	3 6
70g	49 1	27 0	8 0	
Delagar (366 DR & A) existing entry				D
Delagar (810 Maw)				I
bath pearls	45 6	25 0	7 9	
Dormel (1426 UN)				A
feeders	—	—	2 6	
teats	—	—	10	
Drurys (389 Drury)				D
Drurys (246 Chambers)				I
Durex (774 LR)				
diaphragms flat spring	96 0	—	—	A
coil spring	—	—	—	D
Effer-C (312 AC)				
tablets	10 39 0	—	5 6	D
Energen (421 Energen)				I
Energen (1114 SEF)				
Erytex (211 Butler)				
ointment	500g	96 0	—	12 0
1 lb	—	—	—	D
Eylure (443 Eylure)				
cosmetic brushes	48 10	17 11	7 9	●
blending brush	26 9	9 10	4 3	
eyeliner brush	33 1	12 1	5 3	
lipbrush	25 2	9 3	4 0	
shadow applicator	31 6	11 6	5 0	
shadow brush	22 0	8 1	3 6	●
cosmetic sponge	55 1	30 3	9 7	●
lipsticks	40 6	22 3	6 11	●
nail polishes	—	—	—	A
Frooty (127 Bioglan)				
tablets	100 30 0	—	3 6	
1000	20 0ea	—	30 0	
Gastrinol (956 Peptinol) †				A
(distributors 154S Vestric)	12 5ea	4 7ea	20 6	D
Glycinello (664 JS & C)				I
Glycinello (49 Aneson)				
Happy Face (1242 Toni)				
facial washing cream	tube	25 5	8 10	4 6
Homyped (1169 GS & S)				D
Homyped (49 Aneson)				I
(distributors 154S Vestric)				
Ibcol (671 Jeyes)				
disinfectant extra	5gal	58 4ea	—	A
Infraphil (977 PE)				A
health lamp	KL7S00	86 3ea	—	115 0
Jabad (664 JS & C)				D
Intalbut (1490 IAPS) †s4B				
tablets 100mg	1000	60 0ea	—	●
Intaloxin (1490 IAPS) TS				
tablets 250mg	1000	133 4ea	—	●
Intalpen (1490 IAPS) TS				
tablets 125mg	1000	85 0ea	—	●
250mg	1000	160 0ea	—	●

Intalpram (1490 IAPS) †s4B				
tablets 25mg	1000	111 0ea	—	—
Intalsolone (1490 IAPS) TS				
tablets 1mg	1000	18 0ea	—	—
5mg	1000	62 6ea	—	—
Intalsone (1490 IAPS) TS				
tablets 1mg	1000	18 0ea	—	—
5mg	1000	62 6ea	—	—
Jabad (49 Aneson)				
Jeyes (671 Jeyes) existing entry				
Jeyes (671 Jeyes)				
air freshener blocks	23 5	—	—	10
(3 doz.)	(3 doz.)	(3 doz.)	(3 doz.)	(3 doz.)
fluid†	7oz	15 8	—	1 8
20oz	26 11	—	—	2 11
40oz	49 4	—	—	5 4
1gal	13 0ea	—	—	16 6
5gal	56 3ea	—	—	68 3
680g	17 0	—	—	1 9
Freshbin powder				
toilet flats	37 0	—	—	1 5
soft single	(3 doz.)	—	—	2 6
double	(1½ doz.)	—	—	1 0
babysoft single	26 7	—	—	1 0
double	(3 doz.)	—	—	1 10
manilla single	25 4	—	—	1 5
double	(1½ doz.)	—	—	2 6
toilet rolls	33 10	—	—	2 6
babysoft twin	(1½ doz.)	—	—	1 4
manilla	36 2	—	—	—
(3 doz.)	(3 doz.)	(3 doz.)	(3 doz.)	(3 doz.)
toilet fittings				
plastic	22 4	2 0	2 6	
porcelain white	106 8	12 0	12 6	
coloured	12 9ea	1 9ea	18 4	
Jeypine (671 Jeyes)				
disinfectant	5gal	58 4ea	—	—
Lancome (726 Lancome)				
O de Lancome	2oz	—	—	37 6
4oz	—	—	—	67 6
8oz	—	—	—	105 0
atomiser	10cc	—	—	19 6
2oz	—	—	—	42 6
Luminal (97 Bayer)				
elixir	—	—	—	D
Maillecrin (664 JS & C)				D
Maillecrin (49 Aneson)				I
Mavala (664 JS & C)				D
Mavala (49 Aneson)				I
(distributors 154S Vestric)				
Mavaderma	58 0	31 11	9 11	●
Maya (664 JS & C)				D
Maya (49 Aneson)				I
Milo (883 Nestle)	8oz	33 11	—	3 6
16oz	60 7	—	—	6 2
Olygo-Maigril (664 JS & C)				D
Morsep (1007 PL)				
cream	300g	10 4ea	—	—
Olygo-Maigril (49 Aneson)				I
Philips (977 PE) existing entry				D
Otopred (776 JML) TS				
ear drops	3ml	5 6ea	—	8 3
Otoseptil (878 Napp) TS				
ear drops	8ml	11 6ea	—	15 4
Philips (977 PE)				
electric blankets				
3-heat single	HL2216	87 0ea	31 1ea	147 0
double	HL2226	106 2ea	38 0ea	179 6
dual control	HL2236	128 7ea	46 1ea	217 6

family single	HL221S	62	1ea	22	3ea	105	0
double	HL222S	74	6ea	26	8ea	126	0
health lamp combined	HP3108	151	6ea	54	Sea	257	0
infra-red bulbs							
	13379F/3F	26	3ea	9	7ea	44	7
hair clippers	HP2501	58	2ea	—	—	77	6
hair curler set	HP4404	118	0ea	42	3ea	199	6
hair dryer's							
compact	HP4301	101	4ea	36	3ea	171	4
ensemble	HP4110	66	6ea	23	10ea	112	6
hose and hood	HP4902	30	2ea	10	10ea	51	1
and	HP4109	54	9ea	19	7ea	92	6
hood	HP4606	105	7ea	37	9ea	178	6
floor stand	HP4909	30	8ea	4	2ea	45	0
shavers							
lip Top	HP1103	87	0ea	31	1ea	147	0
shave	HP2110	46	11ea	16	11ea	79	6
shilishave 3 de luxe							
	HP1112	118	0ea	42	3ea	199	6
special							
	HP1109	99	4ea	35	7ea	168	0
rechargeable							
	HP1302	202	8ea	72	5ea	342	7
traveller cordless							
	HP1203	74	6ea	26	8ea	126	0
V.X. (810 Maw)							
plastic mender	86S-00	30	0	—	—	3	9
Amington (1044 R)							
shavers							
electric 300		141	7ea	50	8ea	239	6 R
electronic 800		200	9ea	71	10ea	339	6
tar Sapphire		111	9ea	40	0ea	189	0
exall (1053 Rexall)							
food purifier							
and cream aerosol							
shampoo aerosol							
ic and castor oil							

Rimmel (1063 Rimmel)							
violet oatmeal drum	34	4	18	5	5	10	C
Rosyl (644 JS & C)							D
Rosyl (49 Aneson)							I
Scott's (1114 SBF)							D
Scott's (1114 SEF)							I
Secto (333 Cupal)							I
aerosols							I
Vap fly killer							
household size	—	—	—	—	3	11	
Shade (1524 Chembro)	45	6	23	11	7	9	I
Suleo (671 Jeyes)							
emulsion	16	2	5	11	2	6	A
Super Phenamins (1053 Rexall)							C
IS	46	0	—	—	5	9	
60	146	0	—	—	17	9	
Tancolin (810 Maw) † DDI							
children's linctus	100cc	29	0	10	7½	4	6 ●
4oz	—	—	—	—	—	—	D
Terms (421 Energen)							D
Terms (1114 SEF)							I
Ultraphil (977 PE)							A
health lamp	KL2866	113	11ea	40	10ea	192	9
Vallergan (971 PSMB) †s4B							
tablets 10mg	50	70	0	—	—	8	9
Vibro-grains (664 JS & C)							D
Vibro-grains (49 Aneson)							I

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 246 Chambers=J. Chambers (Eastwood), Ltd., 30 Woolpack Lane, Nottingham. 0608 53701.

454 Feedrite=Feedrite, Ltd., 144 Oakfield Road, Selly Oak, Birmingham 29. 021-472 4211.
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Justine (Feraud (480 FP)							
perfume	—	—	—	32	6	●	
Novara (128 Biometica)							
cleanser	39g	23	0	12	4	3	11 ●
Sintisone (227 Erba) TS							
tablets corte	100	200	0ea	—	—	300	0 ●
Wright's (1351 WLU)							
shampoo liquid sachet	16	6	6	1	10	A	
(3 doz.)	(3 doz.)						

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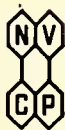
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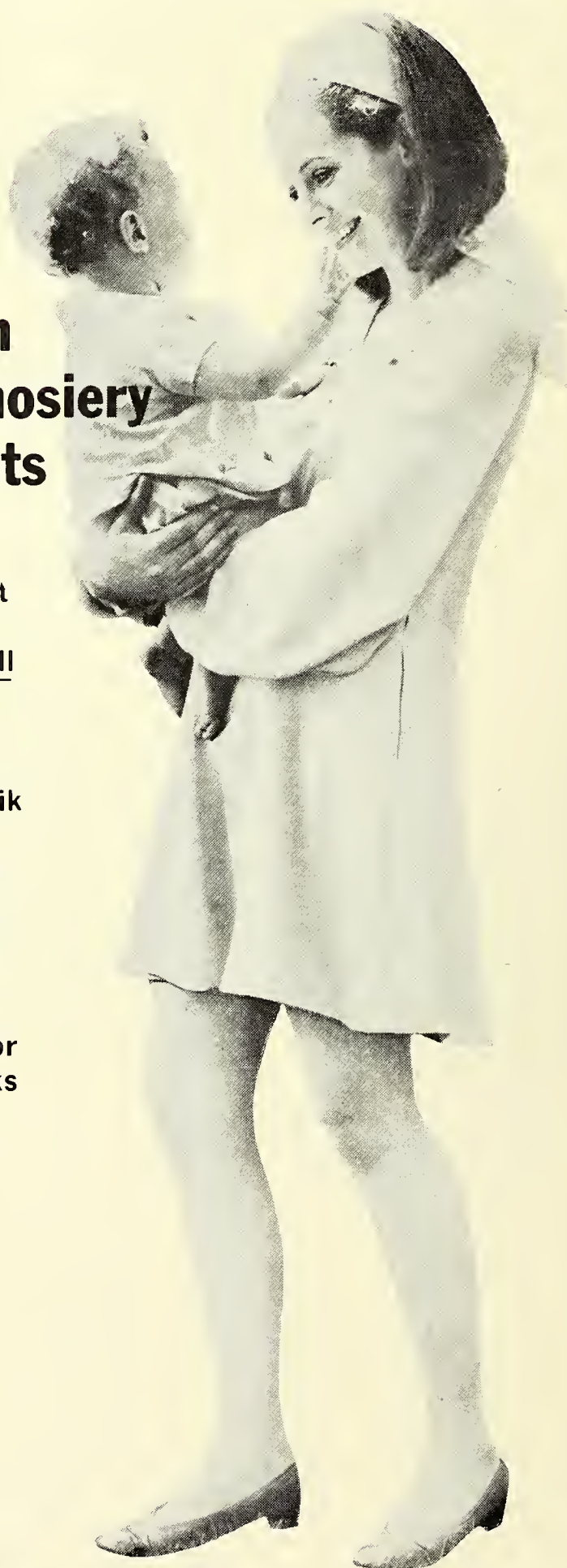


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of any medicine that might be abused, limiting its sale to legitimate purposes and reporting the development.

- (f) Encouraging the public to adopt a responsible attitude to all medicines.
- (g) Taking an active part in organisations formed locally for the purpose of controlling drug addiction. The presence of a pharmacist might well help to give practical direction to such efforts.
- (h) In an extreme case, refusing to supply drugs whether or not lawfully prescribed. Such cases would be rare but, in view of the recent experience with amphetamines, are not inconceivable. No general rule can be given beyond repeating the earlier quotation, namely: "The pharmacist is responsible for his own actions and each individually shares in the responsibility for those of his profession."

The Society, for its part, will continue to keep pharmacists in touch with events and will support any necessary legislation to achieve effective control without cumbersome administration.



Mr S. Durham at the microphone

Discussion

In presenting his paper, Dr Glatt added references to the recent importation of Chinese heroin containing 20 per cent each of quinine and caffeine, and the "mainlining" (intravenous injection) of barbiturates by people not previously interested in "sleepers."

At the end of the discussion, much of which centred on measures the pharmacist could take in helping to combat drug abuse, he said it had shown him that the pharmacist could form part of the team working in that direction.

First constructive suggestion came from Mr W. STEELE, Northampton, who pro-

posed a drive to encourage pharmacists to reduce their stocks of drugs of abuse, in order to minimise the amount reaching the illicit market through thefts from pharmacies. Useless drugs should be thrown away and others not required redistributed, perhaps by advertising in the NPU pink supplement. Mr Steele also hoped manufacturers would restrict the sizes and varieties of packs, and that the Society's inspectors, rather than the police, should inspect pharmacists' books and drug lockers.

MRS ESTELLE LEIGH, Liverpool, put forward as a guide to other branches the action taken locally in her area. Following an invitation from the local probation service to interested parties about three years ago, an *ad hoc* committee, which included a pharmacist representing the branch and one representing women's organisations, had investigated the problem.

The Merseyside Council on Drug Taking had later been formed, again with a pharmacist member. The branch had organised its meetings against that background, with speakers from the police, Customs and Excise, etc.

Counter to takers' communications

An "anti-communications" system was suggested by MR H. MACKLEY, Northumbrian, to counteract the communications system that enabled drug "experimenters" to learn about new drugs to try. A branch of the Society could form "a sort of family tree" whereby each pharmacist notified two or three others. Fifty or sixty retail outlets could be notified in that way in about half an hour. In such matters outside publicity was, he urged, most undesirable.

An alternative system of communication was indicated by MR W. A. WHITE, Derby, who had used the facilities of the local Executive Council to reach contractors in his area.

PROFESSOR A. H. BECKETT, London, a self-declared "pessimist", said that the misuse of drugs was now big business. There were sophisticated chemists behind the drug scene who could make molecules that had never been used as drugs; there were tens of thousands of potential compounds and control could never be the answer.

If legislators did not adopt a reasonable approach to the distribution of medicines they could not expect the public to have proper regard for them.

An important part of the pharmacists' role, he suggested, should be in industry, where he was not being allowed a sufficient say on the marketing side. He hoped the Medicines Act would rectify that to some extent.

Finally Professor Beckett suggested that, since the act of injection was an important aspect of drug misuse, the use in treatment centres of an oral preparation such as methadone should be considered.

Dr Glatt replied that there were difficulties. Patients treated in that way in New York had been those wanting to come off drugs and addicts of long standing. Most of the patients attending the

centres did not want to come off drugs, and many had been on them for only a short time. They might be condemned to lifelong dependence if such alternative methods were employed.

The point behind the intravenous use of barbiturates was difficult to find Dr Glatt told MR F. MCNEICE, Basingstoke. Until about a year ago, youngsters abusing drugs had wanted to be pepped up rather than slowed down. Users got a "buzz" not of the usual kind, and walked round "like zombies." Many wished to come off barbiturates but felt that any "shot" was better than none.

MR C. H. PRESTON ROBINSON, Mansfield, regretted that Mr Dale had not mentioned control of drugs in hospitals.

MR I. BENJAMIN, Biggin Hill, said that pharmacists had for ten years been dragging their unwilling medical colleagues, who had been failing to face up to the problem before them. He hoped that, after the initiative taken by the Society over amphetamine powder, pharmacists would be able to refuse to dispense prescriptions issued by doctors awaiting appeal after having been formally struck off the medical register. The new Medical Act, replied Mr Dale, would suspend the right to prescribe during that period.

MR S. DURHAM, Sheffield, held that legislation would cause the social instinct to show itself in other ways. For example, large quantities of cough linctus were being consumed. He suggested those who wished to experiment should be allowed to do so under supervision. In that way more could be learnt about the problems—such as whether or not cannabis was harmful.

The danger point

MR K. J. WADGE, Plymouth, thought doctors should be compelled to write quantities in words and pharmacists given the right to reduce quantities, except when a patient was known to be on long-term treatment. Mr Dale did not agree. "Either a prescription is valid or it is not."

Replying to MR JAMES STEWART, Glasgow, who asked whether the danger point for illicit drug marketeers to move in had been reached, Dr Glatt said the situation needed to be watched. Treatment centres had cut down the amount of legally prescribed and dispensed heroin available to the black market (i.e. that prescribed beyond the addict's needs) and the price had risen.

Action being taken by the drug manufacturers was outlined by MR A. G. SHAW, secretary, Association of the British Pharmaceutical Industry. At World Health Organisation discussions on the control of psychotherapeutic drugs the thinking had unfortunately been confused, he said, by national points of view. A draft convention with five schedules had been circulated, but without classifying the drugs that would go into the schedules. To dwell on the present convention, which was designed to control narcotics, was wrong. The industry had therefore prepared a draft convention of its own and had sent it to the Narcotics Commission and other bodies for consideration.

SYMPOSIUM SESSION

Plastics in pharmacy and medicine

Important plastics' properties

by J. M. J. Estevez BSC FRIC FPI

In the packing of drugs, plastics are recognised to have the advantages over more conventional materials that they are lighter in weight, less mechanically dangerous, less readily broken, and potentially both versatile and inexpensive. In the US, plastics as packages are now cheaper than the older materials. The "child-proof" tablet container, the "dispenser" offering tablets in a prearranged order, the drug packed in the syringe, the aerosol container, and sterilisable packages for blood and serum, favour plastics over competitive materials. For devices and many surgical implants plastics can alone fully meet requirements.

Polymers employed are numerous, but the importance of a few greatly outweighs that of the remainder. They are polyethylene, both low-density (LD) and high-density (HD); polyvinyl chloride, plasticised and unplasticised; polypropylene; polystyrene and polyethylene terephthalate. Polymers of importance for specialised applications are nylon 66, 6 and 11, polymethyl methacrylate, polytetrafluorethylene, and TPX (polymethyl pentene).

A plastic consists of a polymer; impurities which are the residues of materials used to catalyse the polymerisation or to control it. They seldom exceed $\frac{1}{2}$ per cent in total.

Polymers that could be hazardous in medical work (aniline formaldehyde, polyvinyl alcohol) are not offered for making packages, syringes and such goods. Of the eight polymers mentioned, plasticisers are used only in PVC, and are found mainly in PVC tubing.

Other additives can be broadly classified into:- Antioxidants, thermal stabilisers, lubricants, impact modifiers, ultra-violet light absorbers, antistatic agents, colourants and fillers.

There are plastics without additives (polyethylene terephthalate; some grades of polyethylene) but polyethylene free from additive is less easily fabricated than more complex formulations, nor does it resist oxidation or ultra-violet light as do correctly formulated compositions. Since ease of fabrication has an important bearing on the cost of the final article, additives can be of consequence in the cost of containers.

Presence of an additive does not necessarily increase the contamination of a packed material by the plastic. In polyethenes formulated without oxygen, acidic groups could be formed that could contaminate more than a formula containing the correct quantity of a suitable antioxidant.

What is required of a plastic so that it can be made into an acceptable package for drugs is that the plastics should be easily, cheaply and precisely converted, even if the conversion is complex; that the package shall have reasonable strength and stability, even if sterilised; that it shall protect the drug from attack from the constituents of the atmosphere, including water vapour, from vapours that might be in the vicinity, and from light; that the package shall not contaminate the drug by migration of constituents of the package into the drug; and that the package shall not allow escape of the drug by any of its constituents through itself or by migration into itself.

Diffusion and migration present the greatest problems. Observations falsify such seemingly self-evidently true propositions as "Increase the thickness of film and you will decrease the amount of gas which passes through it", and "Increase the amount of additive in a plastic and you will increase the amount which migrates".

The behaviour of drugs as extractants is largely unknown. A fact to be ignored only at peril is that an extraction experiment gives a result true only for the totality of the circumstances under which it was conducted; change a condition and the result can change dramatically. But though extraction work is imprecise it shows that the quantities involved are small.

Toxic hazard exaggerated

The toxic hazard has been exaggerated beyond reason. When the drug is administered orally there is no problem. All plastic compositions that would be used have been tested for chronic toxicity and approved for food uses on the general assumption that the food will be eaten for 20 years or more.

On implants the knowledge, though elementary, is not nil. Many plastics have been installed in the human body with success, and in many instances details have been recorded.

For ointments and dressings applied to the skin, dermatological tests should be carried out on materials that could leach from the plastic container. One should be on the lookout for materials that could set up sensitising reactions.

Migration from the drug to the plastic would appear a much more serious problem. The drug could ruin the package, but that is rare and all too evident. It is less obvious that the plastic could by solution or adsorption on to the surface remove constituents from the drug. It could lead to a pH change in the stability of a colloid or removal of a necessary constituent. Plastics are gels in which some chemicals are highly soluble, and the activity is specific to particular polymers and particular chemicals.

Though all plastics can be sterilised, conventional means are not always satisfactory. If autoclaving at 30 lb is demanded many plastics are ruled out, though a few remain.

Chemical methods are always available, and the temperatures used in fabrication render all plastic articles sterile at the moment of manufacture.

Crazing and cracking resulting from the action on the plastic of some ingredient of the drug have led to trouble in the past, especially with polyethylene and polystyrene. The phenomena are now better understood and avoidable by choice of the resin.

Some plastics perform certain mechanical operations better than others. The captive cap is best designed in polypropylene, whereas nylon 66 would be selected for a tight-fitting closure of small thread. The design of valves for aerosol containers generally calls for several plastics, selected for mechanical properties but also tested for compatibility with the drug.

Articles for medical, surgical and pharmaceutical use should always be made from virgin polymer, and should be fabricated without adulteration by re-work. Mould release agents should not be used. The behaviour of additives used must be known, and if they impose limitations should be accepted and paid for.

Potential toxicity from migration and penetration through the walls of the container involve only small quantities, and are dependent on time and temperature. They become important when the drug is stored or sterilised in the container. In choosing the right plastic it is necessary in test to put the drug in the plastic, leave it for an appropriate time at an appropriate temperature and see what happens by assay of the drug, using chromatography as an aid, and carrying out biological tests. Obviously when more is known the general practitioner in pharmacy will have available plastic containers he will know how to use, what happens to the drug, and what happens to the plastic.

Plastics in medicine—their safety in use

by B. J. Simpson

Though the advantages of plastics are many and obvious, one must choose materials carefully when embarking upon the design of a new medical product. The selection team must include a toxicologist to ensure that the plastic chosen will be free from toxicity under the conditions of use.

In Britain no requirements cover plastic

medical products, but once the Medicines Act becomes effective the Medicines Commission may be able to advise on the use of containers.

Toxicity data relating to any new pharmaceutical preparation must be submitted to the Committee on Safety of Drugs and, in certain instances, details of the packaging material employed are also necessary so that its effect, if any, on the composition of the product may be ascertained.

The British Standards Institution has issued a specification for single-use transfusion equipment which covers pyrogen, toxicity and limited chemical testing. Other specifications are in draft.

The Food Additives and Contaminants Committee has produced a report on packaging for foods and giving its views on the need for legislation covering food packaging.

The British Plastics Federation (B.P.F.) has listed 400-500 materials that have been used or proposed as plastic ingredients, each with a toxicity rating. The rating is a number between 0 and 1000, the latter indicative of a non-toxic substance.

So far as devices are concerned, the United States Pharmacopoeia includes a monograph on plastics for parenteral containers. Another monograph, in the National Formulary, concerns plastics for parenteral materials and includes biological as well as some limited chemical tests. Other national compendia specify tests for plastic containers for injectable solutions. They usually consist of chemical and physical tests, tests for freedom from pyrogens and an acute toxicity test on extracts of the plastics.

Few legal requirements

There are at present, therefore, few legislative requirements on the use of plastics in medicine. The situation may change with the general introduction of legislation in other countries.

Brewer and Bryant recognised that, though plastics might be sterile and free from pyrogenic activity, they could still produce untoward biological responses when implanted in animals. Experiments indicated that plasticisers and stabilisers commonly used in PVC formulations were the most usual causes of toxic response.

There followed the setting up of a collaborative experiment controlled by the Pharmaceutical Manufacturers' Association. Their tests seem to have formed a basis of the procedures laid down in "Biological tests for plastic containers" in the U.S.P.

In most instances neither the pharmaceutical manufacturer nor the fabricator of the product container knows the formulation details of the plastic material from which the container is formed. Extraction-type procedures must therefore be adopted to make sure that no toxic materials are leached from the device into its contents. Each device and its proposed use and contents must be considered separately. In addition, the dose of extractant which will ultimately be given to the live organism must be carefully chosen.

If the product being tested is intended



Messrs M. J. Busse, D. A. Hughes, B. J. Simpson and J. M. J. Estevez

for use as a container for injectable solutions, extracts should be administered by the intravenous, intraperitoneal, subcutaneous and intradermal routes. Any toxic component in the extract will then be detectable and, by calculation, the quantities of toxic ingredients liable to be leached out in use may be determined.

It is important to examine either water or saline extracts for pyrogenic activity.

Not every plastic product need be examined for its effect on blood, isolated organs, nerve transmission, blood pressure and respiration. Its intended use, however, may indicate that such examinations are necessary.

The need for tissue culture testing depends on the intended use of the products. Extreme caution is needed in assessing the results.

If the formulation details of the plastic are available the toxicity of its ingredients are assessed either by literature searching or experimental work. With an eye preparation, only the toxic effects on the eye would be examined experimentally. Having determined the toxicity of each component, the toxicity of the mixture of ingredients is assessed. Before accepting the container as safe, we make the product and "age" samples for three months at slightly elevated temperatures.

Problems of implants

Assessments of the in-use safety of plastics intended for implantation demands exhaustive testing.

Long-term implantation and the effects of the material on blood, urine and cerebrospinal fluid, etc., must all be taken into account. Finally, a material is not necessarily acceptable because it does not give rise to symptoms of toxicity.

It would make the task of assessment much easier if manufacturers of polymers disclosed all details of formulation to those concerned with toxicity testing. Without that co-operation, blanket procedures have to be employed, with the consequent problems of choice of extractant and of dose, etc. Once a new material has been assessed it is essential that any change in the formulation, however small, should be reported, so that the toxicologist can evaluate the significance of the change.

Plastics for packaging

by M. J. Busse, B PHARM, MPS and
D. A. Hughes, MPS, M INS PKG

Criteria for a satisfactory package are mechanical protection, environmental protection, security, functional adequacy, inertness, cost. It must be economically viable in the specific circumstances.

An inert rigid container completely impermeable to water vapour and gases, stable at sterilisation temperatures, offering first-class closing and reclosing facilities, security and cheapness can only be fabricated in glass. Glass can be employed for virtually every pharmaceutical product and is therefore the best choice for a "standard" container.

When selecting a plastic for a particular application the special properties of the various available materials must be recognised. For example, permeability to materials other than gases differs greatly according to the particular plastic.

PVC and polythene differ in properties and require different approaches to be taken in the design of testing procedures. Grades of polythene contain small amounts of additives and, therefore, for preliminary selection it is sufficient to possess a knowledge of the toxicology of the additives and their probable extractability by the product. A more stringent attitude is required in the case of flexible PVC which contains substantial amounts of additives and we apply the same criteria to it as a drug. Polythene is liable to environmental stress cracking but the degree to which this occurs depends on the grade of material and the composition of the pharmaceutical formulation.

If there are no contraindications in regard to compatibility, permeability, etc., then plastics should be considered for containers:

Where particular characteristics of the plastic material offer functional advantage.

Where the container is required to contain costly materials, where breakage of the container would result in substantial financial loss.

Where it offers a solution to a problem occurring with an otherwise satisfactory

traditional container—e.g., tubes for eye ointments.

Where the contents are dangerous or obnoxious and where breakage of the container would have serious consequences.

Where the risk of breakage is high—as in the nursery—and where the consequences of broken glass are more than usually objectionable.

For export or in other circumstances where transportation costs are disproportionately high and where weight is an important economic factor.

Where the employment of printed containers is advantageous.

Where the moulding characteristics of plastics make possible the production of complex precision components such as closures, plugs, sprinkler caps, aerosol valve parts, tablet dispensers, etc.

Specific pharmaceutical examples are given of containers for transfusion solutions or retention enemas, containers for eye-drops, PVC tubes for eye ointments, spray bottles, suppository packs and flexible packaging.

Symposium discussion

First questioner was DR T. D. WHITTET, who asked whether there existed any list of pyrogenic materials that are plastics ingredients. Had the pyrogenic reactions definitely been dissociated from those of bacterial pyrogens? MR SIMPSON replied that on several occasions he had found pyrogenic activity to be associated with a high sulphate residue and the shape of the fever curve was a little different from that of bacterial pyrogens. He therefore believed the reaction to be distinct; he knew of no list of pyrogens.

MR R. MILLS, Romford, said his company had found with a nasal spray that use of a mixed polymer prevented loss of aromatics. He also asked about control procedures adopted during use to ensure maintenance of standards. MR ESTEVEZ differentiated between co-polymers, in which the polymers were formed together, and so-called polymer alloys, in which the polymers were mixed after formation. More use could have been made of plastic alloys in pharmaceutical packaging if there had been more collaboration between makers and users. On the question of maintaining standards, MR SIMPSON said that batch control was adopted and polymer suppliers were asked to notify any changes they intended making.

MR J. A. CARPENTER, Croydon, questioned how the absence of particulate matter in intravenous solutions could be checked. MR BUSSE replied that particles were limited before filling by a sterile-type filtration, working to an Australian standard of not more than 350 particles larger than 3.5μ per ml. The usual level was 20 to 100 per ml.

Advantages to be gained by collaboration between the petrochemical and pharmaceutical industries were stressed by MR G. F. DOWNES, St. Albans, but he obtained no comment from the speakers on the use

of diffusion from plastics as a means of insect control or room sterilisation.

PROFESSOR A. H. BECKETT, London, asked what safeguards there were to ensure that polymer manufacturers' formulation changes were notified to the user. MR Simpson said that the position was improving with time. He stressed the need to make clear to the supplier how his material was being used.

MR W. H. STEPHENSON, Nottingham, listed the batch-to-batch testing he carried out on polythenes—melt-flow index and an infra-red examination; if formulation changes were suspected there was a full examination, including NMR.

MR BUSSE said it was a matter of getting across to the converter "why we need to know and why we need control."

A practical question from the retailer's point of view was put by MR P. E. TAYLOR, North Staffordshire, who inquired whether there were changes in using as stock bottles polythene containers in which drugs had been supplied. MR ESTEVEZ replied that it depended upon circumstances—chloral for example would be extracted from a contained solution. The danger was one of uptake of drug by the plastic rather than release of the plastic's ingredients.

MR J. A. MYERS, Edinburgh, referred to the use of plastics for artificial heart valves and asked whether they could be affected by blood. MR ESTEVEZ replied that roughening of the surface could occur that was almost certainly an incrustation of inorganic matter. Extraction could also lead to roughening. With polypropylene it was essential to incorporate an antioxidant. Main worry was that the valve could become brittle, leading to spontaneous failure.

MR A. G. M. MADGE, Plymouth, who asked whether the panel knew of any trouble occurring with intraocular lens implants, was told by MR BUSSE that most had been so successful that they had never come out and at death had been found to be in the same condition as when put in. Longest period he knew of was seven years.

Mould growth

MR MYERS had found that it was possible for mould growth to occur on the inside of the outer wrap of intravenous injection fluids. Was it possible that moisture could pass through the plastic and was this a common occurrence? MR BUSSE said that he had never observed such growth and had not received many reports of its occurrence.

A considerable discussion on the stability and maintenance of sterility of intravenous solutions packed in plastics containers was sparked off by MR J. A. CARPENTER, Croydon, who recalled that some years ago a notice had been circulated to hospital pharmacists asking that each container of such solutions should be examined for signs of deterioration before issue. That was easy to achieve in the pharmacy but constant staff changes made it difficult to ensure that the procedure was carried out on the wards. Could manufacturers of intravenous solutions say for certain that their products

were stable and that particles of plastic would not come away over a period?

MR MYERS asked if it were possible to detect pinprick spots in plastics containers. A container was only as good as its seal, and those sometimes gave way. MR HUGHES agreed. PVC containers were sealed by fusion, or welding and failure of the seal could occur. However, by choosing a suitable grade of polythene, the possibility of failure could be minimised and such occurrences were now rare.

MR BUSSE said that in glass containers the number of particles could increase on standing. With plastics containers the number remained constant.

MR W. MOLLON said that his hospital had been one of the first in England to use plastics containers for intravenous solutions and he had experienced only one example of mould growth. That had been due to the container being pierced by a staple of the outer case. Plastics had distinct advantages over glass.

The second main theme of the discussion concerning the reuse of plastics containers for materials other than those they had originally held was recurred to by MR S. DURHAM, Sheffield, who alleged that the practice was common, yet would appear unsafe. How were the increasing numbers of bulky plastics containers to be disposed of?

DR W. R. L. BROWN pointed out that at least one range of plastics containers was being offered for general use. What were the panel's opinions on that?

Reuse can be dangerous

The panel agreed that reusing of containers was dangerous and should not be done without knowledge of the formulation. Containers for general use were satisfactory for tablets and powders but should not be used for solutions unless the manufacturer had been informed of the use to which they would be put.

MR K. A. LEES, though worried about the reuse of containers, thought that pharmacists could apply their technical knowledge. Plastics were lipophilic and could be considered equivalent to a fatty membrane. They would, for instance, absorb alkaloids from solution at pH 3-4 but not pH 8-9.

PROFESSOR A. H. BECKETT asked whether manufacturers could not give some indication on the container of the type of use to which it could be put. MR BUSSE insisted that that should not be done. One must know exactly what one was about.

MR CORNBUM, United States, asked whether the panel had found a satisfactory method of screening out ultra-violet light to protect photo-sensitive drugs. Unusually, replied MR HUGHES, blue pigments had been found effective. MR ESTEVEZ said that thin films of plastic could be made effectively opaque by incorporating particles of carbon black. Phenones, the usual method of screening ultra violet, were effective only in high concentrations.

MR P. CREES, Birmingham, pointed out that plastics mixing vessels and large containers for manufacturing purposes were being offered without any suggestion of limitation on their use.

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SIXTH SCIENCE SESSION

At the final science session of the conference on Wednesday morning Mr I. F. Jones presented evidence that a polarographic method for routine quality control of pyrogen-free water suggested by workers in Eastern Europe was unreliable. It would only work in the presence of activated charcoal and was relatively insensitive to amounts of pyrogen sufficient to produce a febrile response in the rabbit.

Factors affecting the activity of phenolic preservatives in emulsions were discussed in a paper from the department of pharmacy, Chelsea College of Science and Technology. A mathematical model had been derived that could indicate the concentration, type and activity of preservative needed for a given emulsion formulation. Dr Bean, who read the paper, listed the factors that would require to be known. The model, he said, could save time in formulation.

Discussion centred around the various influences that could affect the activity of a preservative, such as the presence of micelles of emulgent, addition of substances affecting pH, and distribution of emulgent on the wall of the bacterium. Dr Bean said the model was not intended to provide a precise guide to the killing time against a bacterium. Emulsions were too complex for that to be done. The purpose was to indicate to the formulator whether the quantity of preservative included was of the correct order. Bacterial studies would still need to be carried out.

Mr E. Adams, Portsmouth College of Technology, described work that had shown that the reduced antibacterial activity of crystal violet against *Staphylococcus aureus* in the presence of meat muscle could be attributed to adsorption of the dye by the muscle. In the presence of egg albumen, however, the minimum inhibiting concentration increased despite the fact that dye was adsorbed. The albumen must therefore be having a protective effect on the organisms, possibly by assisting their growth by allowing build-up of carbon dioxide or by reducing redox potential.

That carrageenans, both degraded and undegraded, could cause ulcerative colitis in guinea pigs was reported by Dr J. Watt, University of Liverpool. Carrageenans are widely used in foodstuffs and the degraded forms were used in several countries for treating peptic ulcer. As yet no adverse reactions had been reported. The lesions were not readily detected unless the bowel was emptied of faeces and examined by transmitted light. Degraded carrageenans produced the more severe ulceration. Distribution of the lesions was different from that of ulcerative colitis in man, but the histological appearance was similar.

Dr Anderson, Glasgow, pointed out that

in the 1950's Laminaria had been reported to cause death by diarrhoea in rabbits and to cause anaphylactic response in guinea pigs. Toxic effects of sulphated polysaccharides were thus not entirely new. Work published on the effect of ionic solutions in the bowel indicated that, if a sufficient volume were given, a similar effect was produced to that described by Dr Watt. Could such an effect have been triggering-off the response in this case? Dr Watt thought not, since both sets of animals had unlimited access to carrageenan solution. Those on degraded carrageenan seemed to reduce their intake after about ten days while those on undegraded material did not.

Continuing earlier work on the solu-



Professor A. M. Cook posing a question at a science session

bilisation of steroids by phospholipids, workers at the School of Pharmacy, University of London, presented a paper showing that the haemolysis of rat red blood cells by aqueous dispersions containing progesterone solubilised by phosphatidyl choline and lysophosphatidylcholine (LPC) could be inhibited by cholesterol and triolein. LPC had previously been shown to double the solubilising power of phosphatidylcholine when present in an equal amount, but the haemolytic activity of the mixture would have prevented its use. Further work using human blood cells would be necessary before the idea could be applied to drug formulations.

A short communication on the metabolism of antagastin and related thioamides by the enzymes in the supernatant fraction of rat liver homogenate was read by Professor W. Hunter, pharmacy department, Chelsea College of Science and Technology. All the compounds investigated appeared to be metabolised in the same way *in vitro* to the nitrile derivative by an oxidative process.

DISCUSSION FORUM

In-process quality control

A well-attended Conference discussion forum was introduced by MR D. SINGLETON, Crawley, who developed the thesis that the examination of a sample of a finished product for compliance with a specification does not necessarily give a true indication of the quality of a batch. The only real guarantee of quality lay in first determining the capability of the manufacturing process to produce material of the required quality and then to apply methods to determine whether or not the process was performing as expected.

MR D. H. DORKEN, Welwyn Garden City, supplemented Mr Singleton's views, but also stressed that few analysts would be prepared to release material for sale, however well the manufacturing process had been monitored, unless the batch of material had been tested to a final specification. The view that quality control simply meant analytical testing was a widely-held misconception. Far too much confidence was placed in isolated analytical results and compliance, within limits, with quantitative label claims.

True quality control began with the issue of a verified formula and continued throughout manufacture, each stage being subject to independent checks until the final reconciliation of yields with quantities of ingredients used. These non-analytical in-process controls would be supplemented by controls based on chemical and physical methods. However those methods were applied it was important that responsibility for the quality of the product should rest firmly with the operator who was making it.

MR W. H. STEPHENSON, Nottingham, felt that an important factor in quality control was the giving of responsibility to suitably trained personnel at each stage of a manufacturing process. In that way process workers developed a sense of pride in their job and mutual respect between process and quality control personnel was built up.

In-process quality control fell into two categories. First was environmental control, which was aimed at ensuring that manufacture was carried out in conditions suitably free of microbial contamination and of cross-contamination with other materials used in the same or nearby areas. Second was control of materials to be used in a process, including control of the packaging materials.

Finally among the invited speakers, DR A. L. GLEN referred to the necessity (as had already been demonstrated by Mr Singleton) of bringing a statistical approach to the concept of quality control. In his opinion there was a need for more efficient treatment of the masses of data that were often available to analysts.

CONFERENCE LECTURE

The use of drugs in the community

by Professor O L Wade MD, FRCP

Abstract

Since the 1930s the achievements of modern chemistry and pharmacology and of the pharmaceutical industry in producing drugs of demonstrable efficacy have reinforced for many an uncritical acceptance that cure is sure to be hastened by drug therapy. This is dangerous thinking.

Complexity of drug action

To the pharmacologist it is increasingly clear that chemicals, which are given as drugs with a specific intent to cure disease or to ameliorate symptoms, have diverse and widespread actions on cells, tissues and organs.

Phenobarbitone, has been shown to stimulate the lysozyme activity of cells so that their metabolism is profoundly changed. Not only is the speed of metabolic breakdown of phenobarbitone itself increased, but the metabolism of many other drugs is accelerated with consequent alteration in their activity. Professor Price Evans of Liverpool has recently shown that the speed of metabolism of isoniazide is also related to cellular enzymic activity and that this is genetically determined, half the population having rapid metabolism of the drug and half slow metabolism.

Isoprenaline is a β -adrenergic stimulating drug. It is frequently administered by pressurised aerosol and is invaluable in the treatment of bronchospasm. For many years it has been known that it causes an increase of cardiac rate which is usually harmless. Recently, in research planned to find how large doses of isoprenaline might lead to sudden death in asthmatic patients, Dr Shanks has found in the dog that if the animal is hypoxic, this drug has a completely unexpected effect: in relatively small doses it causes depression of cardiac contractility and a precipitous fall in the cardiac ejection of blood.

Many drugs after absorption become bound to plasma proteins, but their pharmacological activity largely depends on that fraction which is unbound. If a patient, who is well controlled on a given dose of warfarin which has a weak affinity for plasma protein, is given in addition phenylbutazone, which has a strong affinity, the warfarin is displaced from its bound form and serious bleeding may ensue.

Here are some examples of actions, which have only recently been discovered, of drugs which have been used for many years. There is every reason to believe that the actions of most drugs that are used are equally complex.

In 1928, M le docteur Louis at the Charité hospital in Paris made one of the first scientific attempts to measure the value of therapy. He concluded that the longer blood letting was delayed the better the outcome for the patient, and he suggested that the outcome might have been even better if no blood had been let at all. His anguish at finding that a widely accepted and highly valued procedure might be dangerous to his patients is apparent in his paper. Many successors have had the same anguish, but it has become increasingly clear that planned studies of the type conceived by Louis are needed if the value of therapy, whether drug or other, is to be determined.

In recent years many workers including Professor Elmes and myself have studied the use of antibiotics in patients with chronic bronchitis. There is, in our opinion, little evidence that these drugs have made any substantial impact on the mortality or morbidity of chronic bronchitis in our community although, like M Louis, we find our conviction is not readily shared by either our medical colleagues or the pharmaceutical industry. There is, I think, an understandable psychological barrier to accepting that an available and commonly used therapy is of little value.

It is not enough to demonstrate pharmacological activity: it is the ultimate benefit of therapy which needs to be determined. Several drugs will reduce blood cholesterol level. The critical question is whether by their use of health of a patient can be maintained and the incidence of myocardial infarction reduced.

Adverse reactions

The thalidomide catastrophe left its mark not only on the deformed children but also on doctors, on governments and on the pharmaceutical industry. But the implications have not been fully accepted; perhaps, in the case of doctors, because it is so disturbing to find that in attempting to do good, we may be doing harm.

The correct use of drugs implies consideration not only of the patient but of the community of which he is a member. The problem of cross infection with antibiotic resistant organisms amongst hospital patients is familiar to all of us. It is not so widely realised that similar problems are arising outside hospital. In a recent survey in Belfast, one-third of patients with staphylococcal infections attending a casualty department had staphylococci resistant to benzylpenicillin, and in some parts of the United Kingdom a high proportion of streptococci and pneumococci are now resistant to tetracyclines.

Dependence on drugs is also related to the prevalent usage of drugs in a community. The evidence that amphetamines were of value in the treatment of obesity or that amphetamine-barbiturate mixtures were of value in psychiatric disorders was always tenuous. But skilful promotion of these drugs has led to their wide use. In Japan and Sweden this has led to serious problems of abuse and addiction.

I believe doctors prescribe drugs too often. In the light of what is now known of the complexity of drug action it is increasingly important to use these chemicals only when there is a clear indication for their use, and—because of the potential hazards of drug interaction—to avoid, unless there is good reason, multiple prescribing or the unnecessary use of mixtures.

Only a few combined preparations are justified, one of the more obvious being cachets of para-aminosalicylic acid and isoniazid, where there is a hazard to the patient unless both drugs are taken together.

Many doctors are too easily persuaded to use new drugs. It is invariably better to use familiar drugs until there is evidence that a new drug or a new preparation has some clear cut advantage.

Doctors must accept that assessment of new drugs or preparations is not a field for the non expert. But it is necessary for all to learn enough about the techniques of properly planned trials so that they have skill in assessing and judging the evidence that is presented for the use of a new drug.

Too often part-time

The increasing professional importance of the pharmacist in the hospital service is welcome, but it is time this was emulated outside hospital. For too many pharmacists, pharmacy is a part-time occupation squeezed in among the commercial activities which dominate their income. As long as this is so, retail pharmacists can hardly complain of the inadequacy of their professional recognition.

Many pharmacists work as the medical representatives of the pharmaceutical industry visiting doctors. I would like to see a high professional ethic developed amongst these pharmacists, whose mission should be set higher than giving information solely about their own firms' products.

It is difficult to understand why pharmacists have been so slow in implementing their agreement that the containers of prescribed drugs should be routinely labelled with the name of the preparation. If this makes the handling of drugs safer and is



Break for tea

seen professionally to be desirable, its implementation should surely have had priority, and delay seems churlish.

The pharmaceutical industry is a development from the chemical industry and has perhaps determined the grievous separation of the pharmaceutical industry from clinical medicine in the United Kingdom. Many medical research workers are still suspicious of working in collaboration with scientists in the pharmaceutical industry, and certainly know little of their problems. And very few non-medical scientific staff in the industry ever have an opportunity to work with doctors. It is no surprise that these men "believe" in drugs in a way which no doctor ever can. I believe that much of the promotion of drugs, which encourages the excessive or unwise use of drugs or which is prematurely optimistic, derives from an enthusiasm which is uncurbed by experience of the harsh fact that many, if not most, patients get better despite treatment and sometimes in spite of it. Doctors cannot develop and produce modern drugs; the industry is not in a position to treat sick people. There should be a much closer inter-relationship than at present.

Much of the excessive use of drugs in Western Europe and in the United States of America stems from excessive demands by a public which naïvely demands magic rather than medicine.

Good, sensible, unbiased information about drugs, and less exuberant promotion of remedies would help to change the attitudes of many. I believe that television, broadcasting and the Press have an important duty here.

There has recently been an increasing appreciation of the importance of clinical pharmacology. There is a need to increase the facilities and opportunities for training for this discipline, and the pharmaceutical industry, which already contributes so much to medical research, would, I think, be benefiting itself as well as modern medicine by supporting this development.

The average hospital knows surprisingly little of the work that it does, the drugs that are used, the operations which are

carried out, the results of treatment and its relative value to the community. It is possible now to record much of this data in a form which can be analysed by data processing. This development would make it possible, for instance, to carry out large ongoing intensive hospital monitoring of drugs, and the World Health Organisation has recently recommended to its member nations that such special monitoring should be initiated at a few selected hospitals.

Data on prescribing of drugs by general practitioners is already collected and analysed. But as yet this analysis cannot be related to the diseases or disability from which patients suffer. In relation to the large sums of money spent on pharmaceutical preparations by the Health Services, it is extraordinary that there is so little interest in how and why drugs are prescribed and what benefits derive from them. Such studies are urgently required.

Record linkage

One of the measures of greatest value to help sick persons would be the development of record linkage, so that important medical data about a sick man who arrives in hospital can be rapidly retrieved from records of his investigation and treatment in other hospitals, of his vaccinations, of the care given by his general practitioner or of his specific drug sensitivities.

Only when this sort of linkage is available will we be able to detect rapidly that the use of a new drug is causing an appreciable increase in leukaemia, that women who receive prescriptions for a certain medicine during their pregnancy have an increased liability to produce children with congenital defects, etc.

The cost of prescribing is a fascinating study for an economist. Where else does one man order goods, a second man consume, and a third—the taxpayer—meet the bill?

If the National Formulary was the sole source of drugs for prescribing, the majority of patients would suffer no deprivation whatsoever: indeed the quality of their treatment would improve, for the drugs in the Formulary are the good and the necessary drugs.

I believe the Ministry of Health should stop exhortation. If the Ministry really want doctors to think about the cost of prescribing, it should make it worth while, for doctors are busy men with much else on their minds. An effective and simple measure would be to offer general practitioners £25 per quarter, £100 per year, if 75 per cent or more of their prescribing was from the BNF.

It would be counterbalancing in an effective way the many thousands of pounds spent by the pharmaceutical industry on very skilled and successful exhortation.

CLOSING SESSION

Treasurer's report accepted

During the presentation by Professor J. M. Rowson of the treasurer's report for 1968, at the Conference closing session, MR D. E. SPARSHOTT, Nottingham, complained that investments with a book value of £1,450 were worth only £750 in 1967 and now £693 in 1968. MR C. C. STEVENS, Macclesfield, asked whether the treasurer had been taking expert advice.

PROFESSOR ROWSON replied that during the year he had sought the advice of the Society's brokers, who considered that a transfer of investments would bring only a marginal advantage and would lessen the security. The Executive had decided to leave the funds where they were.

The report was accepted with only one or two hands raised against.

Adoption of the annual report confirmed an exchange of offices, Professor Rowson becoming chairman of Conference for 1969-70, and DR HERSANT treasurer. Mr K. A. Lees remains secretary. Newly appointed to the Executive are Dr M. R. W. Brown, Professor J. E. Carless and Dr W. G. Thomas.

A vote of thanks to the local committee was proposed by DR G. M. MITCHELL, Cardiff, and the following presentations were made: To Mr and Mrs T. I. O'Rourke, cutlery; to Mr and Mrs A. N. Morrison, dinner service; to Mr and Mrs H. W. Gamble, silverware; and to Mr and Mrs H. Boyd, glassware.

Dr Hersant also presented a gavel to Mr B. Flatley, president of the Pharmaceutical Society of Northern Ireland, as a memento of the Conference's visit.

After receiving the chairman's badge of office, Professor Rowson presented to Dr Hersant a replica of the chairman's badge and a cheque subscribed for by past and present Conference members to mark his 15 year's work as a joint secretary of the Conference.

An invitation to the Conference to visit Leeds, September 13-18, 1970, was given by MR M. GORDON, chairman of the local committee.



Hormones, enzymes and drugs

The forecast that man would possess control of his heredity was made by Professor F. G. Young, Department of Biochemistry, Cambridge University at the inaugural lecture of the 29th International Congress of Pharmaceutical Sciences held in London. He said that now that the processes of cellular replication and their genetical control were being understood in terms of molecular biology, the use of biochemical agents, "call them drugs," for controlling heredity was probably on the way.

But he added, drugs were likely to be useful for less dramatic effects for a long time or perhaps nowhere more certainly than in the nervous system.

Professor Young's paper was entitled "Hormones, enzymes and drugs". He said chemically mammalian hormones were a miscellaneous lot. In most instances the

complete chemical structure had been determined, while in numerous instances complete chemical synthesis in the laboratory had been effected.

Generally one could suppose that hormones were metabolites to which a special responsiveness in tissues had developed during the process of evolution. The possibility existed that many, perhaps all, of the tissues of a complex organism could produce minute amounts of all hormones, but that idea was at present hard to prove or disprove.

Hormones must directly or indirectly influence the activity of enzymes, since enzymes were a basic factor in all metabolic activity. An influence of a hormone on membrane permeability, either within or outside the cell, might be of fundamental importance.

Hormones were not normally secreted into the blood stream. They were usually liberated into interstitial tissue fluid, from which they entered the blood stream through a permeability barrier. Likewise hormones must normally leave the blood stream and move into interstitial tissue fluid before they act upon cells in the tissue.

The substances present in the secreting endocrine gland were not necessarily the form in which a hormone circulated in the blood. Nor was the hormone in the blood necessarily identical with the substance that brought about a physiological effect in the tissue. The substance which entered the blood from the tissue fluid of an endocrine gland may itself undergo metabolic change in the blood or in the tissues before it was able to bring about its effect on or in the cells, in relation to the enzymes that ultimately must be affected.

Professor Young then referred to the remarkable species variations in insulin and that the chemical differences between insulin from certain fish and that from the human pancreas were extensive, though the same general molecular pattern was retained. Insulins from the pig, the dog and the sperm whale had the same primary chemical structure, that structure was likely to be the primary mammalian one from which others had been derived by mutations in the course

of evolution. With the exception of insulin from guinea pig pancreas the structure of mammalian insulins could be derived from the postulated primary one by either a single step mutation or a small number of mutations.

Professor Young referred to a new method for the assay of insulin devised by his colleagues Dr L. E. M. Miles and Dr C. N. Hales which employed radioactively-labelled specific antibodies and which appeared to be more sensitive, accurate and specific than those at present generally available.

The method differed from most others at present used for the radioimmunochemical assay of proteins in that it converted the protein to be measured into a radioactive product, the radioactivity of which was then measured directly. Normally a radioimmunochemical assay depended upon the measurement of a difference in radioactivity between that added to the system as radioactively labelled antigen and that bound and precipitated by antibody under controlled conditions. The new method eliminated the errors necessarily associated with the measurement of a difference, and because the radioactivity proportional to the amount of antigen present was measured directly Miles & Hales had called their method "an immunoradiometric method."

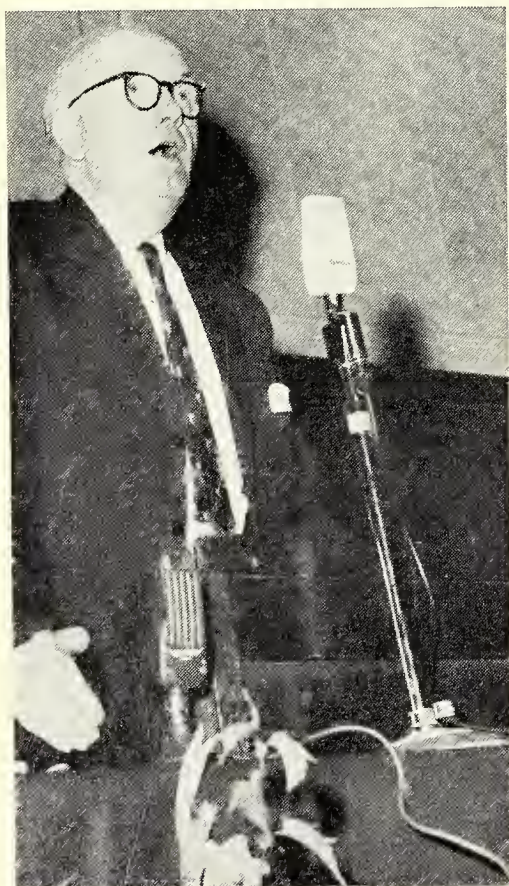
Methods of assay based on the new principle had already been developed for a number of protein hormones, and it was being applied to many others. The principle involved could be employed in the assay of any antigenic protein.

For the living cell the distinction between enzyme and structural protein tended to fade, and the catalytic effect of a surface or a membrane transport system really needed no classification. There was now excellent evidence that the living cell contained a whole series of permeability barriers, and that many enzymes were confined within morphological structures, definable through the light microscope and above all through the application of the electron microscope. The mitochondrion, the ribosome, the lysosome, the nucleus, were all now well-recognized both as intracellular structures and as entities which could be separated from the cell and examined for biochemical reactions *in vitro*.

A relatively recent recruit was the "synaptosome," the name given by Dr V. P. Whittaker, to a detached presynaptic nerve terminal that could be isolated from disrupted nervous tissue. Under conditions of mild disruption the presynaptic terminal region of a nerve became detached from its axon and post-synaptic attachment, and converted into a sealed bag which preserved all the morphological features and most chemical properties of the terminal of the intact nerve.

Examination of the properties of synaptosomes *in vitro* provided a valuable means of investigating the mechanisms involved in the release of those chemical transmitters which conveyed the nerve impulse across the gap between the presynaptic and postsynaptic axons. Here was a valuable tool for the study of the action of drugs which affect the nervous system.

Professor F. G. Young



PROMOTIONS

Manufacturers' loyalty to chemists could transfer to supermarkets

A warning that beauty product manufacturers' loyalty to chemists may wane as supermarkets come into the market, is given in an article in the September issue of *Campaign*, a trade paper for the advertising industry.

The article examines products that are being promoted through the supermarket, Dura Gloss, said to be the supermarket brand leader in America, and Cosmetically Yours, both of which are concentrating on stimulation of impulse purchases.

However, it is suggested that supermarket trade will only become firmly established when a well-known brand launches into the field—and most are wary about doing so because of the drastic reorganisation of production, packaging, and distribution required.

"They would have to produce lines which sell themselves and need the minimum of supporting advice from sales staff. This would virtually rule out skin preparations, cleansing creams, foundation creams, beauty creams and astringents."

Several manufacturers are quoted as denying any intention to change their policies, but the article concludes, "Tesco is already talking about developing separate toiletries departments in its stores at some future date. When this happens, chemists could find that manufacturers' loyalty is no longer as strong as they once thought."

New display bricks from Cow & Gate

Versatile new promotional aids from Cow & Gate are "display bricks" which, in sets of three, ring the changes on six different baby illustrations.

Each brick is 6in square and a set is supplied complete with a Cow & Gate 4s carton in display card.

Suggestions for arrangements of the bricks are printed on the bricks. Available from Cow & Gate home sales department, Cow & Gate House, Guildford, Surrey.



Imperial Leather consumer offer

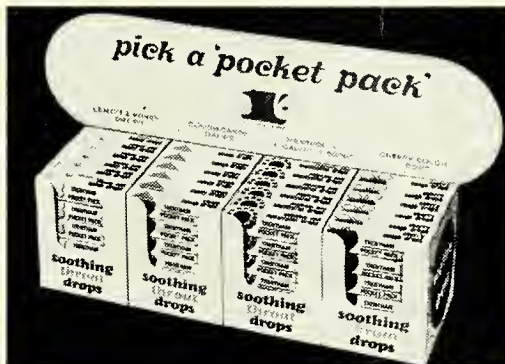
A special consumer offer through all outlets on Imperial Leather soap is being promoted by Cussons Sons & Co Ltd, Kersal Vale, Manchester 7. The offer comprises twopence off the toilet size and threepence off the bath size. Stocks for the offer have a "money-off" flash across the packs and come with a colourful dumper-bin headboard.

Nine flags competition winners

Winner of the Nine Flags International Cologne competition first prize (F D Zanzara sport car) was Mr Robin J. Carter (29) of Cricklewood, London, a sales representative of CIBA Laboratories Ltd.

Second prize (stereo record-player), was won by Miss J. McCartney, Castleford, Yorks, and third prize (a week's holiday for two in Jersey) by a 17-year-old schoolboy: Nigel Belcher of Sheffield.

Competitors were invited to mix their own Cologne cocktail based on the nine Colognes in the Nine Flags range, name it and send in the recipe.



New sales aid for Trentham pocket packs which the distributors, Potter & Moore, Ltd, Lavender House, Seymour Road, Leyton, London E10, are introducing to chemists. Incorporating all four outers the display requires only 16in of counter space

Continuous advertising—and a bonus

Advertising for Radian-B will be at increased levels during the coming autumn and winter, say the makers, Radiol Chemicals Ltd, Stepfield, Witham, Essex. The product has now been advertised all-the-year round for 20 years, they claim.

An extra display discount of 10 per cent is being offered to chemists, on direct orders of £5 upwards excluding tax. Any of the company's products can be included in the order. Supporting display material is supplied with the goods.

Pack promotion by Kleenex

Kimberly-Clark are about to launch their "heaviest ever consumer promotion" on Kleenex facial tissues with an on-pack coupon offer. The products included are Kleenex for men, Kleenex 150's, and Kleenex multicolour.

Kleenex for men tissues will feature a flash on the front and sides of the pack with two coupons totalling 9d on the back. The first coupon, worth 6d, will be redeemable against the purchase of a large facial tissue pack and the 3d coupon will be redeemable against the purchase of a Kleenex kitchen towel pack.

chase of a Kleenex kitchen towel pack.

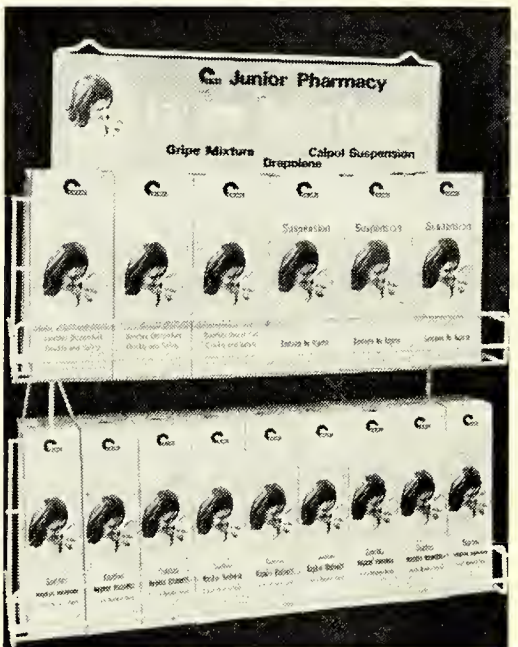
The Kleenex white and multicolour 150's promotional packs will carry coupons totalling 1s, one 8d coupon will be redeemable against the next purchase of a large facial tissue pack and a 4d coupon against a pack of Kleenex kitchen towels.

Pharmacy assistant wins competition

A knowledge of Elida's range of home hair products, and of hair care generally, has won 20-year-old Miss Sandra Smith, Blackpool, a winter holiday for two in Malta.

Miss Smith was winner of the 1969 Miss Elida contest open to Elida beauty club consultants. She has worked in the Blackpool pharmacy of W. E. Barber for four years ago and will be taking her holiday just before Christmas. With the five runners-up Miss Smith recently enjoyed an expenses-paid trip to London.

The Elida beauty club for chemist assistants is now nearly five years old and is continuing to grow. The Miss Elida contest is run once a year and entries are restricted to consultants who account for roughly one in four of the membership. Organisers are Elida Ltd, Hesketh House, Portman Square, London W 1.



New display unit for "family"-packed baby products of Calmic Ltd, Crewe Hall, Ches

ON TV NEXT WEEK

Ln = London; M = Midland; Lc = Lancashire; Y = Yorkshire; Sc = Scotland; WW = Wales and West; So = South; NE = North-east; A = Anglia; U = Ulster; We = Westward; B = Border; G = Grampian; E = Eireann; CI = Channel Islands

Andrews: All areas

Anadin: All except Lc, So, We.

Bisodol: Sc, So, NE

Bellair: Ln, M

Cleen-o-Pine: All except Lc, E.

Fore: Lc, Y

Fynnon Spa: Ln, M, WW, So, NE, A, We.

Macleans: All areas.

Steradent: Ln, M, Y, A, CI.

NEW PRODUCTS AND PACKS

Pharmaceutical specialities

For dispensing

Inter-Alia are offering a new range of dispensing products each bearing a brand name beginning Intal—. The range comprises:—

Intalpen penicillin V (as potassium salt) 125 mg and 250 mg, Intalsolone prednisolone 1 mg and 5 mg, Intalsone prednisone 1 mg and 5 mg, Intalbut phenylbutazone 100 mg, Intalpram imipramine 25 mg and Intaloxin oxytetracycline 250 mg. (Inter-Alia Pharmaceutical Services Ltd, Raphael House, 226 High Street North, London, E 6.)

Double-strength steroid tablets

Following the successful introduction of Sintisone tablets, Carlo Erba announce the addition of a double-strength tablet—Sintisone Forte. Each Sintisone Forte tablet contains 13.3 mg prednisolone stearoylglycolate (equivalent to 7 mg prednisolone). Indicated in conditions requiring high doses of corticosteroids over fairly prolonged periods (e.g. haemolytic anaemias, thrombocytopenias, leukaemia and some collagen diseases), the white, scored tablets are presented in a blister pack of ten supplied in box of 100 tablets at basic N.H.S. price of 200s. (Carlo Erba (U.K.) Ltd., 29 Great Peter Street, London SW 1.)

Vitamin C tablets photo 1

Arthur H. Cox & Co Ltd announce another addition to their wide range of COB packed preparations: effervescent vitamin C tablets, each containing 1 g of ascorbic acid, BP.

The ten tablets are packed in a Securitainer plastic tube with a tear off strip, ensuring that the tablets reach the consumer in good condition. The tablets dissolve quickly in water, leaving a clear solution with a pleasant lemon flavour. Effer-C tablets are available to the chemist cartoned in his own selected design of own-brand, own-name pack, and come in Darragh (upright) containers each designed to hold 12 cartoned tubes. Showcards are also available on request. (Arthur H. Cox & Co Ltd, 93 Lewes Road, Brighton BN2 3QJ.)



Cosmetics and toiletries

Military style photo 2

Royal Regiment is a new range of men's toiletries and grooming aids from Max Factor. It is offered in two fragrances: Oak Moss, a fantasy fragrance with a spicy masculine note, and Original, a leather fragrance incorporating a fresh spicy note. The range consists of after shave lotion (18s 7d), cologne (21s), soap (10s) and body talc (11s 7d).

The presentation is distinctively military in concept with chunky bottles and canisters for the after shave lotion. The Cologne and talc are decorated with gold-embossed "regimental" badges. Royal Regiment is also in two gift sets containing after shave lotion and soap (34s 7d) and after shave and talc (36s 2d). (Max Factor Ltd, 16 Old Bond Street, London W1X 4BP.)

Revlon's Pub range photo 3

With the introduction of Pub, a new range of male toiletries, Revlon are making a determined bid for an even bigger slice of the £11m male cosmetic market. Sandwiched between That Man, the popular Revlon range, and Braggi, the exclusive ultra chic collection of grooming essentials, Pub is aimed at a completely new middle section of the market, that large group of men who are "carbolic scrubbed and indifferent to 'pong' because they are afraid it is effeminate. Men who are fiercely, aggressively masculine and who blanch at any notion of frills." The preparations are packed for maximum masculine appeal in handsome beaten pewter.

Pub Cologne (49s 6d) is described as a strong, bracing fragrance. Pub on Tap (147s) is Cologne dispensed in 'ye olde



world spigot,' pours just enough off into the palm, then shuts off automatically. Spray Cologne (59s 6d) is in a sleek silver metal hip flask. After shave (39s 6d) is a bracing tonic packed in an attractive barrel shaped bottle with cork stopper. After shave balm (39s 6d) packaged in an unbreakable flask.

Other items in the range are: Pub talc powder keg (27s 6d). A deodorant stick (21s) in a push-up cylinder, and deodorant Cologne spray (29s. 6d). (Revlon International Corporation, 86 Brook Street, London W 1.)

For a rising market photo 4

Claimed to be another Tried & True winner, Max Factor have created a deep-acting conditioning treatment, especially for women with damaged hair. Tried & True proteined conditioner for a market that is increasing by 10 per cent each year. Tried and True proteined conditioner is in two sizes 56 g tubes (7s 8d) and 105 g jars (14s 9d). (Max Factor Ltd, 16 Old Bond Street, London W1X 4BP.)

For women and men photo 5

Ô de Lancôme is a new Eau de Toilette by Lancôme, to complement their existing range of fragrances. It is "very fresh and citrus, cool and lemon green" and can be used equally well by men.

Ô de Lancôme is packaged in a smart, tall, translucent, oval bottle with a repoussé design reminiscent of the 'cloud formation' patterns on old Chinese bronzes. There are three sizes: 2 oz (37s 6d), 4 oz (67s 6d), and 8 oz (105s 0d), together with a 2 oz atomizer (42s 6d) and a 10 cc handbag atomizer (19s 6d). (Lancôme (England) Ltd, 14 Grosvenor Street, London, W1X 0AQ.)

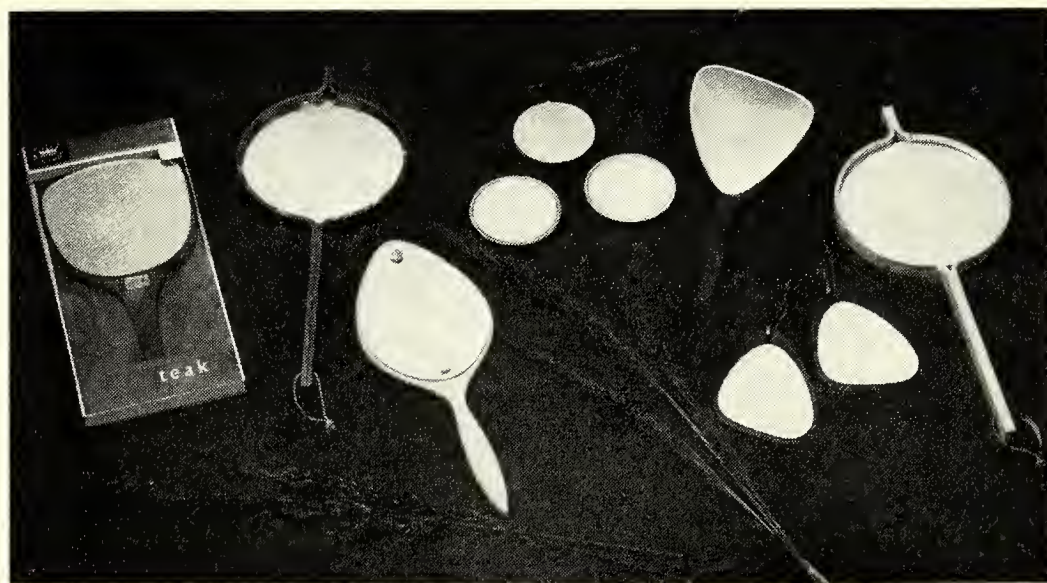


Aerosol deodorant photo 6

Said to be formulated for the busy woman who can never afford to seem anything other than completely cool and fresh, Concern, the latest introduction by Anne French, is an aerosol deodorant containing chlorhexidine hydrochloride. It has a pleasant floral freshness that does not conflict with other perfumes. Pack is a 70 g aerosol (8s). As an introductory offer a smaller size is available (3s 6d) (International Chemical Co Ltd, 12 Chenies Street, London, WC 1).

Evening shadows

The Gala Cosmetic Group, Ltd, Surbiton, Surrey, have issued more eye shadow shades. See Through shadow sticks that colour without cover are called Clear Sky, Clear Sage and Clear Aqua (7s 9d). Three new Eye Glimmers in deeper more intense shades:— Evening Azure, Evening Sage and Evening Aqua (8s 9d) and three new soft dusky shades of Matte Shadow:— Blue Grape, Iced Sand and Grey Dusk (7s 9d).



Baby foods

Varieties of Heinz baby food photo 7
Heinz have introduced two new 9d varieties, strained cheese and egg supper and junior cheese, ham and egg supper.

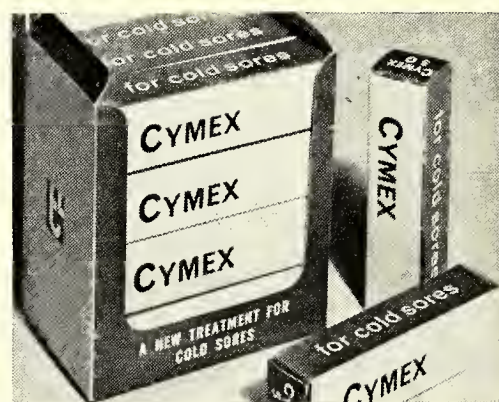
By increasing the number of available baby foods at breakfast, dinner and tea, manufacturers have expanded the total market. Against a falling birth rate of 3 per cent over the past two years, the junior and strained market has grown over 17 per cent, while the consumption of Heinz preparations has jumped 28 per cent (H. J. Heinz Co Ltd, Hayes Park, Hayes, Middx.)

Sundries

Range of mirrors photo 8

Designed by Dala of Sweden, the new Royal Sweden range of mirrors are unique in their young and modern designs. The handbag mirrors (6s 6d) are wooden backed with a leather thong. Four different styles of dressing table mirrors are available in teak and pine woods making them ideal for matching with modern furniture. Matched also with the Royal Sweden hairbrushes, they make an attractive 'set'.

The suggested retail prices of the larger mirrors are between 21s and 24s 6d (Distributors Jackel & Co Ltd, Kitty Brewster Estate, Blyth, Northumberland).



Over the counter medicinals

For cold sores photo 9

A new Trentham Laboratories line is Cymex, a treatment for cold sores, containing hexachlorophane, 1 per cent, which kills common bacteria infecting the virus vesicle preventing spreading, dimethylsiloxane 100, 3 per cent, is added to prolong the action of the hexachlorophane by sealing the area and preventing moisture penetration and tissue softening and urea, 1 per cent, promotes rapid closure of the vesicle.

A lanolised base prevents dry cracked lips, the source of secondary infection.

Pack is a 5 g tube (4s). (Distributors E. C. De Witt & Co Ltd, Cherry Orchard Road, East Croydon CR9 6HD.)

TRADE NEWS

Pregnancy test kits being posted to pharmacies

Belmont Laboratories, 188 Brent Crescent, London NW 10, were posting during this week to all independent United Kingdom pharmacies a set of instructions and show material for their pregnancy diagnosis service (*C&D*, August 23, p 152).

Dr Brian Block, pharmacist-director of Belmont told the *CHEMIST AND DRUGGIST* that in deference to the wishes of the Pharmaceutical Society only a small amount of show material was being supplied and it would be for use inside the pharmacy. On that material the public would solely depend in learning that the pharmacist was undertaking the service.

Dr Block described the size of the market for pregnancy testing as "staggering." Belmont were handling ten times the number which they did three years ago when they were alone in the field; now there were about 20 laboratories carrying out similar work.

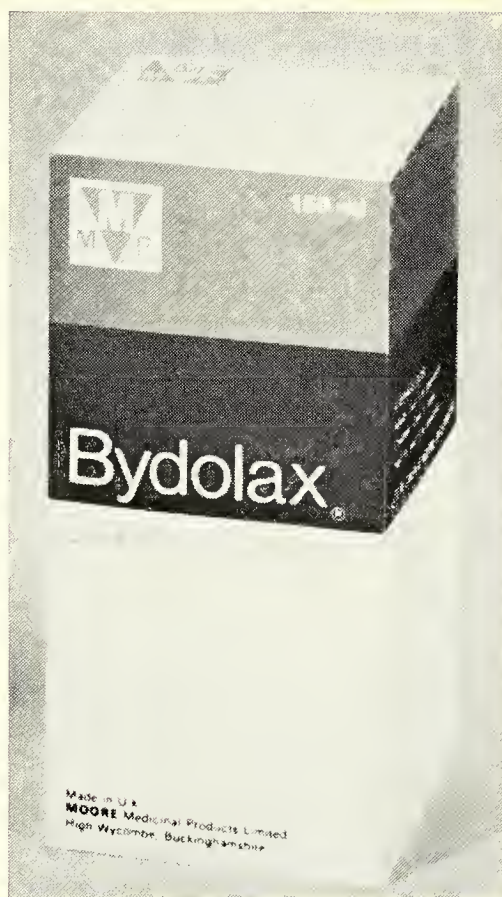
A new company, Pharmacy & Professional Services Ltd, has been formed to handle the business from pharmacists. The registered office is at the same address as Belmont.

☐ Boots Ltd have decided that they will not at present take part in the provision of pregnancy testing services through their branches.

A tube for Happy Face

Happy Face, the facial washing cream is to be packed in a 57 g handbag size tube (4s 6d).

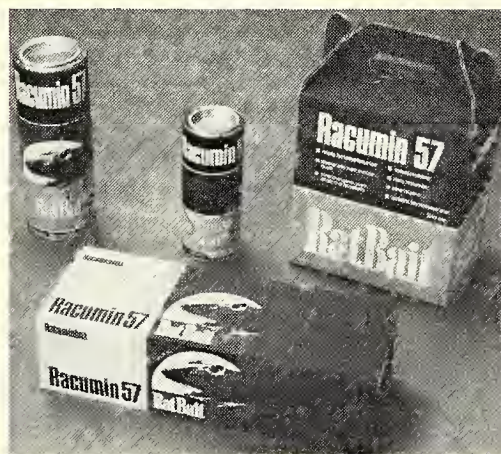
Mr John Symons, marketing manager of Gillette, says the new tube will satisfy the demands of regular users and will make Happy Face available to a much wider range of purchasers. The lightweight handbag size tube is being introduced in the London and Southern TV areas. A price-off introductory offer of 1s 3d will accompany the launch.



Up-dating ethical products

Up-dating a range of ethical products, sold mainly on prescription and for Moores Medicinals Ltd, High Wycombe, Bucks, is another recent successful package design operation by Richard Lonsdale-Hands Associates Ltd, Chesterfield House, Bloomsbury Way, London WC 1.

By retaining one of the two colours already used and reversing the branding out of a strong black band, an easily recognisable range concept giving good individual product differentiation has been achieved.



New Baywood Racumin packs

Two new additions to the existing retail range issued by Baywood Chemicals Ltd, Eastern Way, Bury St Edmunds, Suffolk, have been announced. The Racuminbox is so made that it can be simply adapted to produce a bait box. It holds 4 x 250 g sachets of Racumin 57 bait (9s). Then there is the convenient 5 lb carry pack of rat bait (16s). Two other packs join the existing Baywood retail range, the 20 g tin for rats and 8 oz Racumin mouse-bait tin. The new range of packs coincides with a Baywood "war on rats" month which started on September 1.

Luminal elixir to be discontinued

The Bayer Products Co intend to discontinue Luminal elixir when present stocks are exhausted. The elixir contained 0.39 per cent w/v phenobarbitone or approximately 19 mg per 5-ml spoonful, compared with the 15 mg dose of phenobarbitone contained in each 5ml of elixir phenobarbitone B.P.

Another pack

In addition to the existing 500- and 1,000-tablet packs, E. R. Squibb and Sons Ltd are adding to their list a pack of 100 Stecsoin tablets, Oxytetracycline dihydrate BP, 250 mg.

Metricated

Pfizer, Sandwich, Kent, have replaced the 16 fl oz pack of Tetracycline syrup with a 500 ml pack (25s 6d).

Rimactane pack sizes

As from September 8, CIBA Laboratories Ltd, Horsham, Sussex are changing the packaging of Rimactane capsules, both 150 mg and 300 mg, to loose-filled in aluminium cans of two sizes, 25 and 100.

Now in fifties

Roche Products Ltd, Welwyn Garden City, Herts, advise that Valium Roche ampoules 10 mg in 2 ml are now being made available in packings of fifty (121s 0d).

Revised marketing arrangements

Roberts' Croupline Ltd, Burnden Works, Croft Lane, Bolton, Lancs, are now marketing Zubes, Zubes cough mixture, Keybells glycerine lemon and ipec and Keybell's glycerine and honey.

Change to amber glass

Dermal Laboratories Ltd, 247 Gray's Inn Road, London, WC 1 are changing the pack of Psoriderm bath emulsion from polythene to amber glass bottles, a step that has been found necessary to "improve the storage properties of the product."

Bonus offers

Allen & Hanburys Ltd, London, E 2. Haliborange tablets 12 invoiced as 11 for a limited period.

Lilia-White (Sales) Ltd, Charford Mills, Birmingham 8. Lil-lets 10. Reduction of 4s a case subject to an equal number of Twin 20's being purchased at the same time. (Until October 3.)

Information wanted:

The Editor would appreciate information about:

Coloran hair colourant
Castle brand air purifier.

Trade shows

Liverpool:

75 Duke Street
September 15-19 Pioneer Drug & Chemical Co Ltd

PATENTS

Complete specifications accepted
From the 'Official Journal (Patents)',
August 27

16 α , 17 α -ethylene and substituted ethylene derivatives of the pregnane series
Syntex Corporation 1,166,609.

Intrauterine contraceptives
H. F. G. Sheppard and L. R. Cook 1,166,613.

Composition for oral hygiene
Unilever Ltd 1,166,627.

Compositions for the care of the oral cavity
Unilever Ltd 1,166,628.

Penicillins and a process for the preparation thereof
R & L Molecular Research Ltd. 1,166,668.

6,6-ethylene-9 α -fluoro steroids
Smith Kline & French Laboratories 1,166,673.

Production of 7-chloro-6-demethyl-tetracycline by fermentation
American Cyanamid Co 1,166,681.

Salts of 5(p-(2-pyridylsulphamyl)-phenylazo)-salicylic acid
Pharmacia AB 1,166,684

5-nitro-2-furans and a process for the preparation thereof
Pharmacia AB 1,166,690.

Aminoalkenylbenzenesulfonamides
Richardson-Merrell Inc 1,166,728-29.

Antibiotic composition
Chas Pfizer & Co Inc 1,166,732.

Phenoxyacetic acids
Merck & Co Inc 1,166,758.

Substituted benzamides
Salsbury Laboratories 1,166,793.

Process for the preparation of 1-n-butyl-2',6'-pipercoloxylidide
Sterling Drug Inc 1,166,802.

Treatment of human head hair
Pifco Ltd 1,166,824.

Blood grouping test kit
Nordisk Insulinlaboratorium 1,166,849.

British patent specifications relating to the above will be obtainable (price 4s 6d each) from the Patents Office, 25 Southampton Buildings, Chancery Lane, London, WC2, from October 8.

From the 'Official Journal (Patents)',
September 4

Diphenylamine derivatives and compositions containing them
Aspro-Nicholas Ltd. 1,166,861.

Steroid carbonates
Merck & Co Inc. 1,166,878.

Method of producing 7-nitrosobenzodiazepines
F. Hoffman-La Roche & Co AG. 1,166,944.

Acceleration of post-surgical healing
Baxter Laboratories Inc. 1,166,956.

Process for making tablets containing aspirin and salicylamide
Monsanto Chemicals Ltd. 1,166,958.

Assay method for amylase
Warner-Lambert Pharmaceutical Co. 1,167,083.

2-substituted 5-nitrofurans and a process for the preparation thereof
Pharmacia AB. 1,167,088.

Process for the manufacture of 4,4'-dihydroxystilbenes
Wacker-Chemie GmbH. 1,167,093.

1-methyl-oestrene compounds
Organon Laboratories Ltd. 1,167,098.

Toilet tablets
Unilever Ltd. 1,167,131.

16 α , 17 α -ethylene and substituted ethylene derivatives of the pregnane series
Syntex Corporation. 1,167,140.

Method of treating seeds and living plants and fungicidal preparations
Schering AG. 1,167,181.

Preparation of propionic acids
Boots Pure Drug Co Ltd. 1,167,192.

Hepato-splenic extracts
Istituto Bioterapico Genovese SpA. 1,167,221.

Dispenser
Abbott Laboratories. 1,167,261.

1-sulphonyl-5, 5-disubstituted-hydantoins and process for preparation thereof
Dainippon Pharmaceutical Co Ltd. 1,167,262.

Pesticidal compositions comprising 3-substituted pyridines
Eli Lilly & Co. 1,167,263

Surgical bandage and method of fabrication
General Electric Co. 1,167,345.

Emollient compositions for conditioning human skin and hair
Armour & Co. 1,167,369.

5-[(aryldihydropiperidinyl - and aryldihydropyrrolidinyl) - alkyl] - 2 - oxazolidinones
A. H. Robins Co Inc. 1,167,392.

Reserpine derivative having pharmacological activity and compositions containing the said derivative
Egema. 1,167,407.

Electric toothbrush
Braun AG. 1,167,444.

Hypotensive 1, 4-dihydropyridines
Smith Kline & French Laboratories. 1,167,447.

Preparation of pyridoxine-4, 5-cyclic-monophosphate
Kyowa Hakko Kogyo KK. 1,167,459.

3 - [(5 - nitrofururylidene) aminol - 4 - imidazolin 2 ones
Norwich Pharmacal Co. 1,167,471.

Medical compresses
B. T. Glensfield. 1,167,481.

Nematocidal compositions
J. R. Geigy AG. 1,167,526.

Fabrics, particularly to handages and dressings
Ludwig Povel & Co. 1,167,529.

Diphenylhydantoin derivatives
Laboratoires J. Berthier SA. 1,167,558.

3 - (2 - substituted ethyl) indoles and processes for their manufacture
A. H. Robins Co Inc. 1,167,562-63.

British patent specifications relating to the above will be obtainable (price 4s 6d each) from the Patents Office, 25 Southampton Buildings, Chancery Lane, London, WC2, from October 15.

TRADE MARKS

Applications advertised before registration
Trade Marks Journal August 27 No. 4748

Meditation, 933,523, by Horizon Enterprises Ltd, London SW 16. For cosmetic preparations; non-medicated toilet preparations; dentifrices; soap; preparations for cleaning artificial teeth; depilatory preparations; preparations for the hair; and toilet articles (3)

Neutraclear, 934,441, by Wella (Gt. Britain) Ltd, Basingstoke, Hants. For soaps, perfumes, non-medicated toilet preparations, essential oils, cosmetics, and preparations for the hair (3)

Unicura, 935,249, by NV Koninklijke Pharmaceutische Fabrieken V/H Brocades-Stheeman & Pharmacia, Amsterdam, Holland. For toilet soaps, non-medicated toilet preparations for the hair, for the teeth and for the skin, etc. (3)

Neutrastrate, 937,781, by Wella (Gt. Britain) Ltd, Basingstoke, Hants. For soaps; perfumery, being perfumes and perfumed non-medicated toilet preparations; essential oils; cosmetics; preparations for the hair; and dentifrices (3)

Medises, B919,373, by Sterwin AG, Zug, Switzerland. For pharmaceutical preparations, all being in the form of discs or wafers and for the treatment of conditions of the human mouth (5)

One Jump Ahead (device), 925,840, by Bullmoor Garages Ltd, Enfield, Middlesex. For distilled water and first-aid kits (5)

Basoquin, B926,579, by Parke Davis and Co, Detroit, Michigan, USA, and Hounslow, Middlesex. For pharmaceutical preparations and substances for human and veterinary use, all containing quinoline compounds (5)

Geritax, **Gerivite**, 930,978-79, by British Chemotherapeutic Products Ltd, Bradford, Yorks. **Xylocard**, 940,135, by Astra-Hewlett Ltd, Watford, Herts. For pharmaceutical preparations and substances (5)

Abstorbine, 931,101, by W. F. Young Inc, Springfield, Massachusetts, USA. For veterinary preparations (5)

Berigloban, 933,047, by Behringwerke AG, Marburg/Lahn, Germany. For pharmaceutical preparations for human and veterinary use (5)
Haenigron, 933,330, by Willows Francis Ltd, Westthorpe, Bolton, Lancs, and Epsom, Surrey. For pharmaceutical preparations and substances, all containing iron for treating anaemia (5)

COMING EVENTS

Monday September 15

Birkenhead Branch, Pharmaceutical Society. Pensby Hotel, Birkenhead, at 8 pm. Speaker from Fryers of Knutsford on "Roses."

Romford Branch, Pharmaceutical Society. Medical academic unit, Chelmsford and Essex Hospital, London Road, Chelmsford, at 8 pm. Mrs Olga Heppell on "Renal Haemodialysis."

Tuesday September 16

Dudley and Stourbridge Branch, Pharmaceutical Society. Peter Domenic Ltd, Stourbridge, at 8 pm. Wine and cheese tasting.

Wednesday September 17

Bradford Branch, Pharmaceutical Society. Oakwood Hall, Bingley, at 7.30 pm. Chairman's evening.

Leeds Branch, Pharmaceutical Society. Wetherby Golf Club. Match with team from Crookes Laboratories Ltd, and Reckitt & Colman Ltd. Intending players should contact Mr M. Jones (Leeds 53559 or Rawdon 2885).

Society for Analytical Chemistry. Leicester Lounge, 44 Glasshouse Street, London W 1. at 6.30 pm. Discussion on errors in radio-chemical analysis.

South London and Surrey Pharmacists' Golfing Society. Shirley Park Golf Club at 1 pm. Competition for Founder's trophy and president's prize. Annual supper at 7 pm. Cost £2 2s per head.

Thursday September 18

Bedfordshire Branch, Pharmaceutical Society. White Hart Hotel, Flitton at 8 pm. Speaker: Mr W. R. Littlejohn (editor, *Perfumery and Essential Oil Record*).

Edinburgh and South-eastern Scottish Branch, Pharmaceutical Society. King's Hotel, Market Street, Galashiels, at 8 p.m. Mr W. M. Darling (vice-president of the Society) on "Problems that are Facing us."

Saturday September 20

Agricultural and Veterinary Group, Pharmaceutical Society of Great Britain, Sunderland School of Pharmacy. Week-end course on crop protection.

East Midlands Branch, Guild of Public Pharmacists. Lecture theatre, biology sciences building, Boots Pure Drug Co Ltd, Pennyfoot Street, Nottingham, at 3 pm. Miss C. Gibson (a Canadian pharmacist) on "Training of Clinical Pharmacists at the Westminster Hospital, London, Ontario."

Advance information

Agricultural and Veterinary Pharmacy Group, Pharmaceutical Society of Great Britain. School of Agriculture, Sutton Bonington, Loughborough, Leics, at 2 pm on October 29, Group meeting. Dr I. Falconer on "Induction of Lactation;" Dr D. B. Crighton on "Use of Pregnant Mare's Serum Gonadotrophin (PSMG) for Inducing Reproductive Activity in Anoestrus Animals;" Dr N. B. Haynes on "Use of Naturally Occurring and Synthetic Steroids in Induction of Breeding Activity in Sheep." Details from Miss J. L. Millward, Pharmaceutical Society, 17 Bloomsbury Square, London, WC 1.

Domestic and Decorative Lightshow, Olympia, London W 14, organised by Brintex Exhibitions Ltd. Sunday opening, January 18 to 23, 1970.

Industrial Society. Youth At Work conference, Free Trade Hall, Manchester, October 20, 9.30 am to 4.30 pm.

MARKET NEWS

Forward offers of cascara resumed

London, September 9: Shipment offers of cascara 1969 peel were resumed during the week but quotations were 25s cwt up on the opening offers received three weeks ago. India was asking 750s cwt, cif, for celery seed while a parcel afloat was quoted at 700s, a rise of 90s cwt on the week.

New crop *strophanthus Kombé* came on offer for shipment and old crop on the spot was offered at a 5s lb premium. Turmeric for shipment was dearer but spot holders did not move their rates in sympathy. Brazilian menthol advanced ninepence lb. Gentian was available in both positions but at higher rates than when last offered. Podophyllum was down by 5s cwt. There were some adjustments in the prices of pharmaceutical gums.

Among essential oils lemongrass was lower for shipment but *Arvensis* peppermint whether from China or Brazil was dearer on the spot.

Resorcinol and quinoline are among a number of chemicals which have been exempted from import duty for a further period (until January 1, 1970). Calcium bromide lactobionate and calcium gluconate lactobionate, tetraethylammonium chloride, butalamine hydrochloride and linoestrenol became temporarily exempt on September 4. The changes are effected by an Order published as SI 1969 No. 1215.

Pharmaceutical chemicals

Ammonium acetate: Kegs (50 kg) BPC 1949, 7s. 3d kg; solution (200 kg drums) strong, 2s 3½d kg.

Ammonium bicarbonate: BP powder £54 10s per ton; carbonate, £83 10s for lump and £87 10s for powder.

Ammonium chloride: 50 kg lots pure powder 2s 5½d kg in paper sacks.

Antimony: Trichloride flake in 25 kg drums about 15s 2d kg; potassium tartrate, USP 9s 6d lb.

Ascorbic acid: (Per kg) 1-kg 27s; 5-kg 24s; 50-kg 21s 6d. Coated is 1s 6d more and **Sodium ascorbate** 4s 6d more than the acid.

Atropine: (Per kg for 500-g lots) alkaloid and methonitrate 1,200s; methylbromide 1,183s; sulphate 970s.

Bacitracin: USP 75s per mega unit.

Bismuth salts: Per kg

Quantity (kg)	under 50		50		250	
	s	d	s	d	s	d
carbonate	125	9	124	0	123	0
salicylate	105	0	103	0	—	—
subgallate	102	0	100	0	—	—
subnitrate	113	6	111	6	110	6

Bemegride: BPC 320s kg.

Benzamine lactate: In 500-g lots 1,023s per kg.

Calciferol: 1-kg lots 2s 7½d per g.

Calcium pantothenate: 92s 6d for 1 to 9-kg lots.

β-Carotene: Suspension 20 per cent 334s 6d kg.

Chlorophenesin: 50-kilo lots 72s 6d kg.

Cinchocaine hydrochloride: 850s kg.

Citrates: Sodium £255, £250, £241 per 1,000 kg for 50, 250, 1,000-kg lots respectively. **Potassium** £273, £269, £259. **Iron and ammonium granular** 9s 8d, 9s 7d, 9s 1d kg; scales, 13s, 12s 8d, 12s 5d.

Cortisone: per g. Acetate 4s 6d; **Hydrocortisone** acetate or alcohol also 4s 6d.

Cyanocobalamin: 100-g lots 52s 6d per g.

Digoxin: 100-g lots are 40s per g.

Dinoestrol: 5-kilo lots 1s 3d kg.

Dithranol: BP 330s per kg, for 5-kg lots.

Emetine hydrochloride: £450 kg.

Ferrous phosphate: In kegs 7s 11d.

Glucose: (Per ton) monohydrate: powder £76; anhydrous £48 10s; liquid 43° Baume; £59 10s (5-drum lots).

Glycerophosphates: (Per kg in 50-kg lots); calcium 29s 6d; iron 37s 10d; magnesium 39s 11d; manganese 57s 5d; potassium 50 per cent 9s 8d; sodium 50 per cent 6s 11d; powder 22s 10d; **glycerophosphoric acid** 20 per cent 12s.

Hexamine: BPC 1959 in kegs 6s lb.

Homatropine: (500-g lots per kg): Alkaloid 1,087s; hydrobromide 858s; hydrochloride 1,017s; methylbromide 893s; sulphate 1,052s.

Hydroxocobalamin: 100-g lots 105s per g.

Hyoscine hydrobromide: 5,200s kg.

Hypophosphorous acid: BPC 1959 17s per kg; pure (50 per cent) 21s.

Inositol: 1-kg 100s; 10-kg 90s kg.

Iodoform: (per kg) powder, 50 kg 64s 6d; crystals, 6s 6d more.

Isoprenaline sulphate: 5-kg 273s kg.

Kaolin: Light, 500-kg 1s 3d kg; 1,000-kg 1s 2d kg.

Magnesium carbonate: 1-ton lots; light £135 6s 8d; heavy £167-£168.

Magnesium hydroxide: BPC, £466 13s 4d. per ton.

Magnesium oxide: BP (per ton): light £485 6s 8d; heavy £793 6s 8d.

Magnesium peroxide: BPC (15 per cent) 3s 11d lb for 1-cwt lots.

Magnesium phosphate: Tribasic, BPC 1949 10s 4d kg, in sacks; dihydrogen 9s kg for 50-kg lots.

Magnesium sulphate: BP crystals in minimum 1-ton lots from £24 to £30 per ton, exsiccated £50 ton, ex works.

Magnesium trisilicate: 1-ton £448.

Menaphthone: (100-kg lots 120s kg; **Acetomenaphthone** 112s 6d; **Menaphthone sodium bisulphite** (vitamin K₃) 67s.

Nicotinamide: (Per kg) 1-kg 32s; 10-100 kg 29s.

Nicotinic acid: 1-kg 27s 6d; 5-kg 25s kg; 25-kg 22s 6d; 50-kg 22s.

D-Panthenol: 1-9 kg 182s kg; 10-kg 172s per kg.

Paracetamol: 250-kg 21s 10½d kg.

Penicillin: Sodium, potassium or procaine, 2·25d per Mu. for 5,000 Mu.

Phenacetin: 1,000-kg 13s 11½d kg.

Phenazone: 1-cwt lots 9s 6d per lb.

Piperazine: under 50 kg; adipate 19s 3d per kg; citrate 18s 6d; hexahydrate 13s 3d; phosphate 22s 6d; tartrate 19s 6d.

Prednisone: 1 kg lots, alcohol and acetate 6s 6d per g.

Prednisolone: alcohol and acetate from 7s per g.

Pyridoxine: (Per kg) 170s; 5-kg tin 167s kg. 25-kg drum 165s.

Quinidine: sulphate 14s 4d per oz for 1,000-oz lots. Alkaloid 17s oz (500-oz).

Quinine: In 25-kg lots (per kg). Sulphate 405s 7d; hydrochloride 555s 10d; bisulphate 402s 8d; dihydrochloride 540s 11d; alkaloid 540s 11d; hydrobromide (15 kg lots) 549s 8d.

Riboflavine: 161s 6d kg; 5-kg tin 157s kg; 25-kg 155s.

Salicylamide: 250-kg 13s 3½d per kg.

Sodium bicarbonate: BP £24 8s per ton for 8-ton lots in 1-cwt bags.

Sodium chloride: Vacuum dried 179s 4d per ton in paper sacks for 6-ton lots.

Sodium cyclamate: 1 ton lots 4s lb.

Sodium fluoride: BPC 50-kg kegs 10s 4d kg.

Sodium formate: BPC 1934 6s 8d kg in 50-kg lots.

Sodium gluconate: Pyrogen-free 500-g £12 per kg; refined 150 kg 8s 9d kg.

Sodium metabisulphite: Powder 1s 11d kg in 50-kg sack.

Sodium nitrate: BPC, 50-kg kegs 6s 2d per kg.

Sodium pantothenate: Per kg 105s for 1-9 kg lots.

Sodium perborate: (Per ton) tetrahydrate (minimum 10 per cent. available oxygen), £144 8s. in kegs; £136 18s in bags; **perborate monohydrate** (15 per cent. available oxygen) is £313 4s.

Sodium percarbonate: (Per ton). £173 15s in kegs (bags £7 10s per ton lower) for minimum 12 per cent. available oxygen.

Sodium phosphate: BP acid crystal 6s 3d kg; powder 8s 1d.

Sodium potassium tartrate: BPC (Per 1,000-kg) 50-kg £267; 250-kg £258.

Sodium salicylate: 1-ton lots in bulk 3s 10½d per lb.

Sodium sulphate: BP from £30 to £35 per ton as to crystal. BP exsiccated £58 10s ton.

Sodium sulphite: 4-ton lots; photo quality, £31 12s 6d per ton in bags.

Sodium thiosulphate: In 4-ton lots £40 per ton ex works.

Streptomycin: Base and sulphate 2·85d per g.

Thiamine: (Per kg) hydrochloride 1-kg tin 110s; 5-kg 108s; 25-kg 106s. The mononitrate is 114s; 112s and 110s for similar quantities.

Theobromine alkaloid: 25s 11d per kg cif.

Theophylline: 50-kg lots 37s 3d per kg; hydrate 36s 6d and aminophylline 36s 3d per kg.

Urea: BP £57 ton; technical £38.

Vitamin A: Acetate and palmitate up to 10,000 million international units; 2½d per m.i.u.; 10-15,000 m.i.u. 2½d.

Vitamin D: Powder for tableting, 850,000 i.u. per g. 125s per kg; in oil. 1 million i.u. per g. 67s 6d per kg for 100,000 m.i.u. Crystalline see under calciferol. D in oil (1 M per g), threepence per M. for less than 100-g ampoule.

Vitamin E: (kg) Tocopheryl acetate 267s 6d; 10-kg. 262s; 25 per cent dry powder 10-kg 102s.

Zinc carbonate: BPC 25-kg sacks 4s 9½d kg.

Zinc chloride: BPC 1959 sticks 23s 4d per kg.

Zinc oxide: BP 2-ton lots £135 3s 6d ton.

Zinc peroxide: 1-cwt lots of BP 1953 5s 3d per lb.

Zinc sulphate: Commercial £54 ton.

Crude drugs*

Cardamoms: (Per lb) Tanzanian 20s spot; 19s 6d, cif. Alleppy greens 30s 6d, cif.

Cascara: Spot 370s cwt nominal, shipment 370s, cif.

Cinnamon: Seychelles bark 430s cwt spot; 400s, cif. Ceylon quills (cif), four 0's 7s 4d lb; seconds 5s 3d.

Gentian: Spot 340s cwt; shipment 330s, cif.

Ginger: (cwt) Nigerian split 410s; peeled 400s spot, 365s, cif. Jamaican No. 3 700s spot.

Gums: (Per cwt) **Acacia:** Kordofan cleaned sorts 265s spot; 254s, cif. **Karaya:** No. 2 f.a.q. 435s spot; 415s, cif. **Tragacanth:** No. 1 spot £290; No. 2 £265.

Menthol: (lb) Chinese 37s 6d spot; October-November shipment 34s 3d, cif. Brazilian 27s spot; 26s 3d, cif.

Nutmegs: (Per lb, cif). Grenada 80's 6s 4d; 110's 5s 10d; defectives 4s 3d; East Indian 80's 5s 4d, 110's 4s 9d, bwp 3s 9d.

Pepper: Sarawak white 3s 10d spot, 3s 6½d, cif, black 2s 10½d, cif.

Podophyllum: *Emodi* 425s cwt spot; 360s, cif. September-October.

Seeds: (Per cwt) Chinese star unselected **Anise** 190s; Spanish green 260s. **Caraway:** Dutch 167s 6d on spot. **Celery:** Indian afloat 700s, cif; shipment 750s, cif. **Coriander:** Moroccan 105s spot; 96s, cif. **Cumin:** Chinese 175s duty paid; Syrian 140s, cif. **Dill:** Indian 152s 6d, cif. **Fennel:** Chinese 115s duty paid; 95s, cif. (50-kg). **Fenugreek:** Moroccan 75s duty paid; 60s, cif. **Mustard:** English 57s 6d to 95s as to quality.

Strophanthus: Kombe 65s lb spot; 60s, cif.

Turmeric: Madras finger 340s cwt spot; September-October 350s, cif.

Waxes: (cwt) **Bees':** Dar es Salaam 735s, for shipment, cif. **Candelilla** 550s spot; 540s, cif. Fatty-grey **Carnauba** 350s spot, 330s, cif; prime yellow 550s and 510s, cif.

Essential oils*

Citronella: Ceylon 7s per lb spot; 6s 4½d, cif; Formosan no offers; Chinese 5s 9d in bond; 5s 10d, cif.

Lemongrass: Spot 58s 6d kg; September-October shipment 50s, cif.

Peppermint: (Per lb) *Arvensis*. Chinese 10s 3d spot; 10s 3d, cif. Brazilian 11s spot; shipment 10s 4½d, cif.

American *Piperita* 40s to 50s, cif, new crop. Italian 95s.

New York market

New York, September 8: Cortisone and hydrocortisone prices are to be raised by 3 cents per g to 39 cents per g in 1-kg lots or more, from October 1. Brazilian menthol remains steady at previous levels.

Prices obtained by importers or manufacturers ex warehouse for bulk quantities

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Maureen hasn't clicked in two years.

Maureen bought this camera about three years ago, you see. She took it on holiday to Spain the first year, and got some nice snaps of her and a friend on the beach. That Christmas she used the flash thing, too. There were all these parties going, and the pictures made for a good laugh when it was all over.

But that was more than two years ago. She hasn't used the camera since. She came across it the other day, and she's taking it along to the party this evening to pop off a few flashes.



Mind you, she doesn't understand much about cameras. She hasn't even changed the battery for the flash thing. So you don't expect it to work.

It probably will though. Because there's a Mallory Duracell battery inside. And a Duracell's power stores and stays fresh for at least two years.

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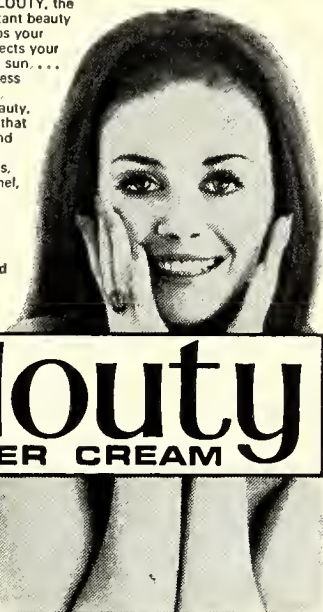
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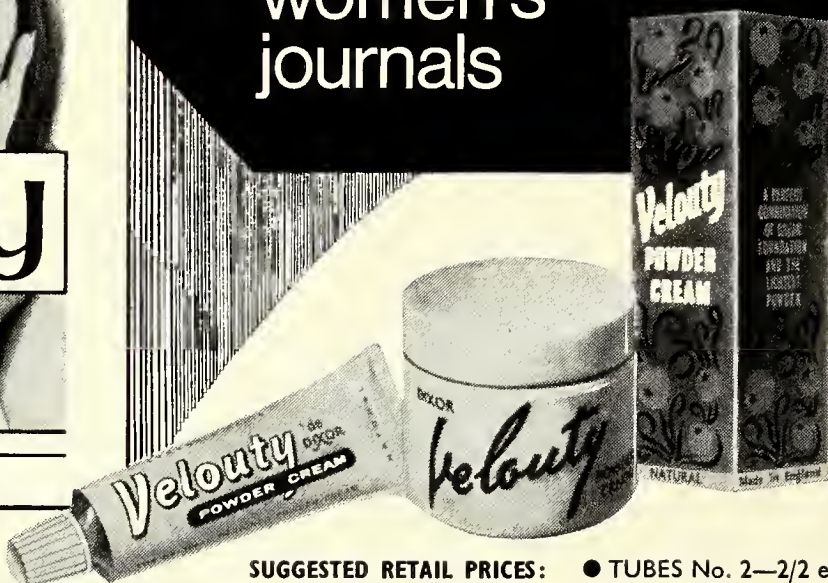
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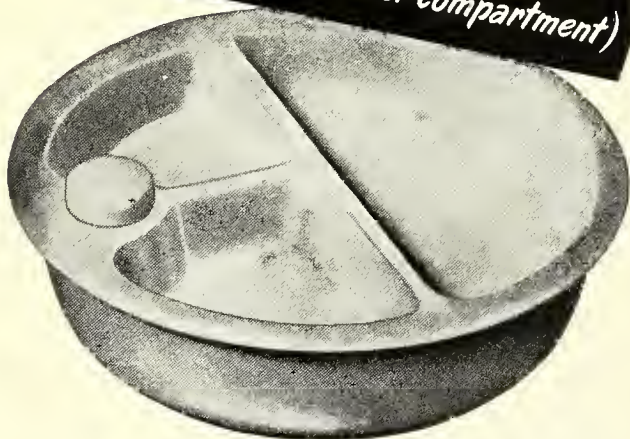
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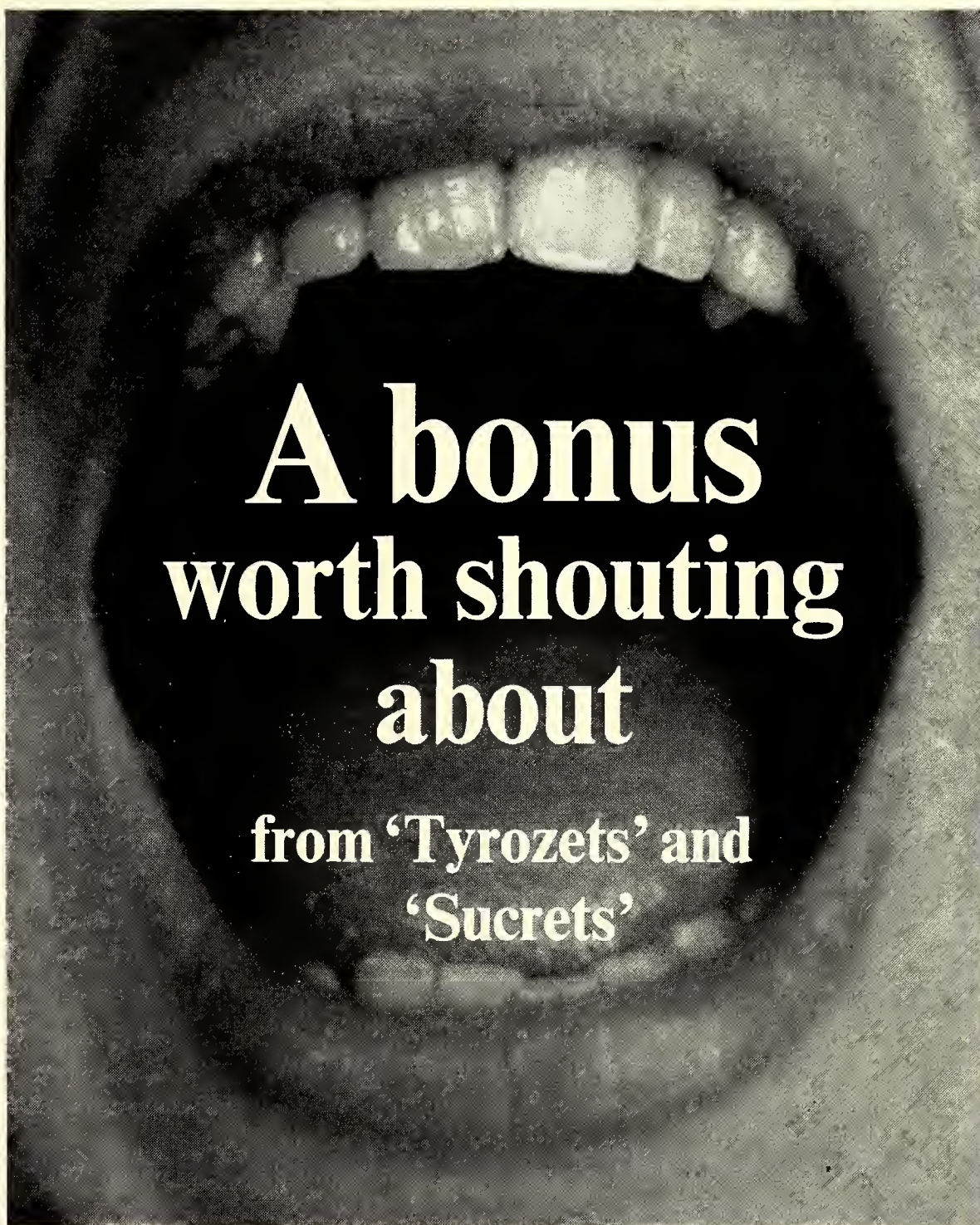
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Barnet Group Hospital Management Committee

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required in the Sterile Products Unit, Liverpool Road, London, N.1. Duties include preparation of injections and other sterile materials with the possibility of spending some time in the Manufacturing Section at Gray's Inn Road preparing ointments etc. Salary £590 to £820 per annum plus £90 London Weighting. 38 hour week with alternate Saturday mornings free. Apply naming two referees to the Group Chief Pharmacist, The Royal Free Hospital, Gray's Inn Road, London, W.C.1.

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required. Preference given to holders of Apothecary Hall Certificate. Salary scale £590 to £820. Previous hospital experience an advantage but not essential. Applications in writing to be made to the

Chief Pharmacist, THE GENERAL HOSPITAL, Birmingham, 4.

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PHARMACY TECHNICIAN I or II required (TRAINEE considered)

Enquiries to Chief Pharmacist (Telephone: 01-274 9941). Applications to Hospital Secretary, St. Francis' Hospital, St. Francis' Road, East Dulwich, S.E.22.

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Prestonpans Co-operative Society Limited,

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E. Lothian, Scotland.

Public Appointments *Cont.*

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Applications are invited from men or women for the post of LECTURER GRADE I at the Army School of Dispensing, Military Hospital, Colchester.

Candidates should possess the Diploma of the Pharmaceutical Society of Great Britain, or a University Degree in Pharmacy or Science, acceptable by the Pharmaceutical Society for registration as a Pharmacist.

Experience of teaching would be an advantage.

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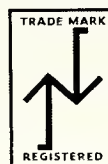


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